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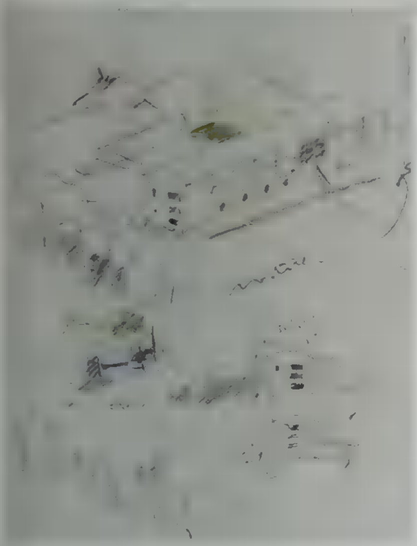

Sketch by Carlos Jimenez for his addition to Museum of Fine Arts, Houston.

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RECORD's Ten-Point Guide for 1995

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Many years ago, when I was in high school, I belonged to the school meteorological station. Our job was to issue accurate daily weather forecasts using nothing but a barometer, rain gauge, and thermometer in a region notorious for its fickle climate. To cover our collective posteriors, a typical forecast came out as follows: "Rain, with possible sunshine." It worked thoroughly: we were never entirely wrong, nor entirely right, but we always ended the day unscathed.

Economists as a breed do the same thing, albeit in a more sophisticated way. The great George Christie, with whom I used to lunch twice a year, and who served as chief economist for F. W. Dodge for 30 years, used to tell me, when asked how he felt about his track record, that he had done pretty well, thank you, by the simple expedient of linking his outlook to conditions and circumstances, buttressed by a vast database.

All of this encourages me to put on the table my own forecast for 1995:

1."Green" design will continue to make slow headway, despite a great array of supporting but often contradictory resource information.
2.Architects will continue to be bashed for being unmindful of cost and time, mostly due to the sins of a few and the long time it takes to reverse a prevailing bias. In the end, but not this year, people will discover the truth, which no millions of dollars of AIA member dues poured into advertising will change, namely, that some architects can manage cost and time, some are creative and produce masterpieces, others are creative and produce junk, some are good at all of these things, and that persuading clients to hire an architect when they have to anyway by state law is like forcing people to use an umbrella when it rains. The millions could be far better spent on encouraging clients to use architects in that huge no-man's land of single-family houses, industrial and infrastructure work now in the tight grip of the developer-builder and the engineer.
3.Trash will continue to be America's greatest physical resource, since more of it is produced than any other material. It will trigger a large, profitable recycling industry whose products will penetrate into every sector of American business.
4.Project-delivery systems will proliferate to satisfy a broadening range of building scenarios, while self-interested hyping of design-build will continue to run well ahead of real advances.
5.Computers will continue to transform the practice of architecture by making possible vastly faster, simpler linkages between members of the building team, as well as between the inhouse drafting, cost estimating, spec writing, and materials-takeoff functions. Computer-illiterate employees will hit the ceiling—a glass ceiling.
6.Every client of any stature will champion environmental correctness, but must be closely watched to make sure it doesn't erect a highly energy-efficient structure in an open field, thereby requiring a new road, new utilities, and reached by cars using non-replaceable fossil fuel and spewing added toxic gas into the atmosphere.
7.Inspired by Uncle Newt, red tape will decrease. Leaner bureaucracies will include building departments which, encouraged by New York City precedent, will allow architects and engineers to obtain building permits without plan review by department examiners so long as they certify that the plans conform to codes and zoning. The downside is that tough environmental, ADA, landmark, and zoning regulations will suffer, endangering coastlines, wetlands, air quality, and historic architecture and engineering. But well-heeled landowners may find it *Continued on page 9*

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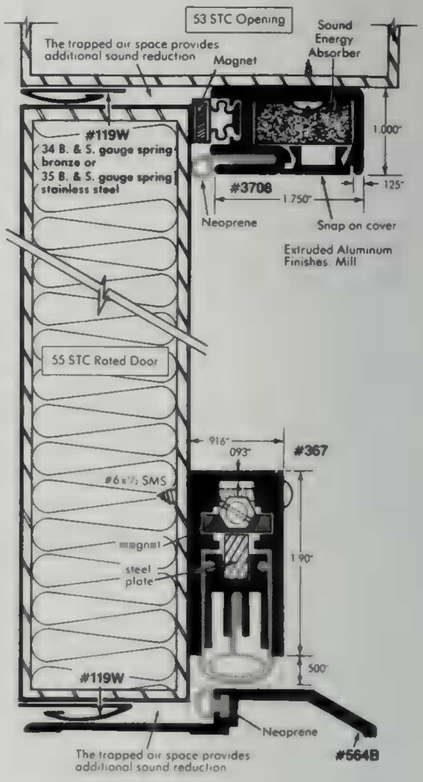

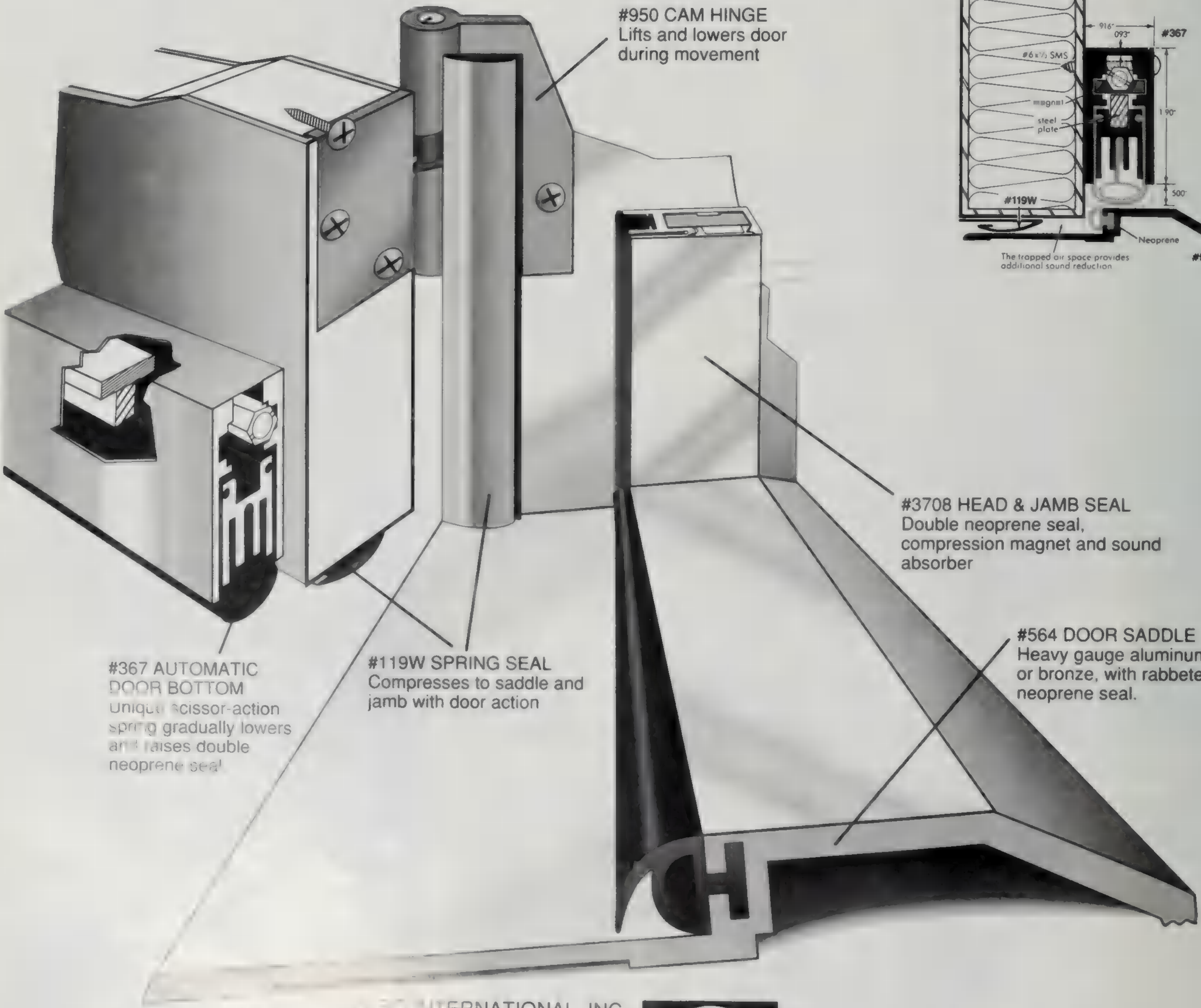

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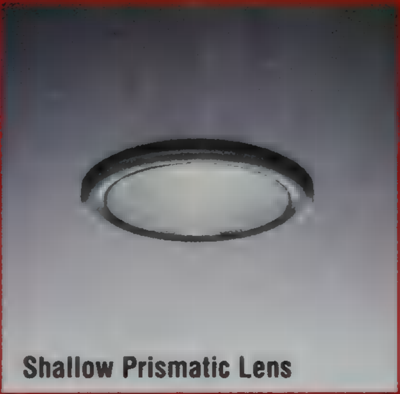
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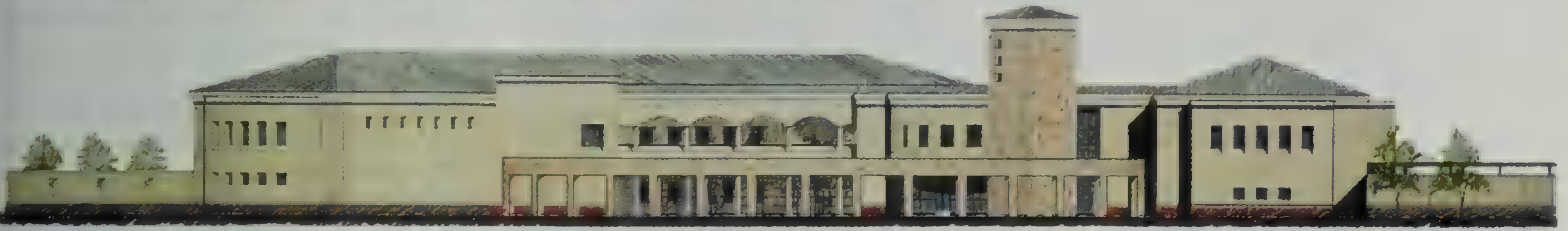
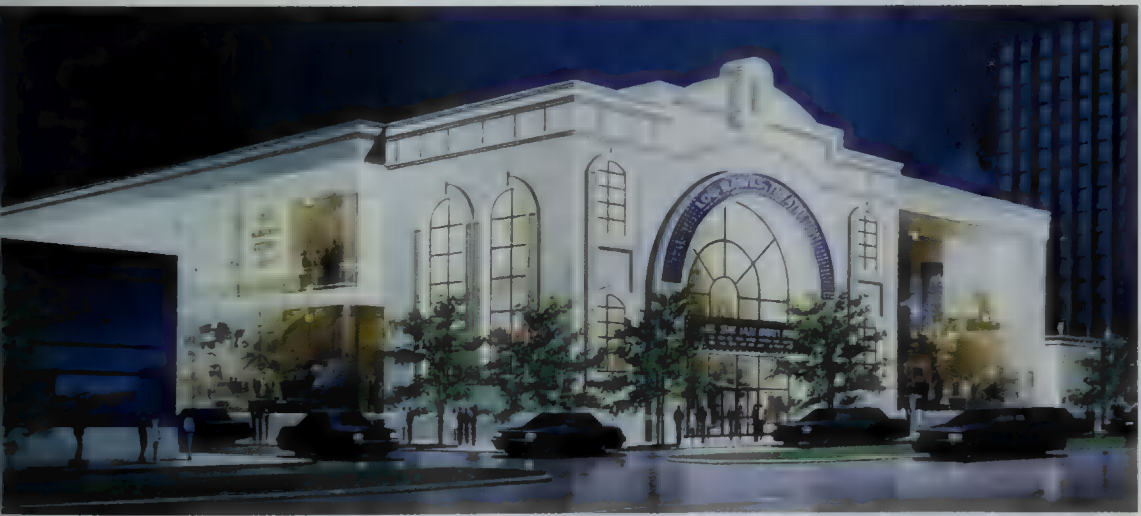


The site of a surplus Air Force base in Laredo, Tex., will soon be the home to another group of men and women in blue uniforms: police personnel. One half mile from a commercial strip at the edge of town, Wiginton Fawcett Hooker of Dallas and Ashley Humphries Sanchez of Laredo have designed a police station that balances contemporary planning with a regional bent. The 61,000-sq-ft building has two main wings that are hinged together to form a V-shaped building. The wings embrace a colonnaded courtyard and the main lobby. Police, public, and staff are carefully separated: each group has its own entrance on one of three sides of the building. But the courtyard generously opens up to the public through a series of outdoor spaces. An internal courtyard is separated by a covered arcade while a larger external courtyard is defined by a sweeping arc of freestanding columns—the "Commemorative Colonnade," which is a memorial to fallen police officers. Construction on the $4.6-million building begins this month.■

Chicago

Calloway, Basie, Rawls Honored in Stone Resurrected

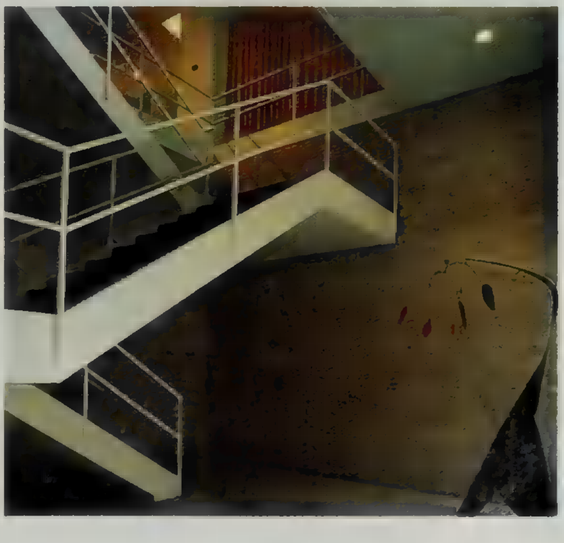


A retro-style cultural center will anchor the rehabilitation of a once-run-down community on the south side of Chicago. The Lou Rawls Theater—named for the Chicago entertainer who once lived in the area—will combine a theater with a library, restaurant, radio-TV station, and an adjacent roller rink. The design by Hanna Architects, Inc. is a nostalgic hybrid: a contemporary cinema/mall complex with a 1920s facade. Modeled on the Regal Theater that once stood on the site, the building harks back to a time when the troubled neighborhood was an upscale black residential community. Among the jazz and pop-music greats who performed there were Cab Calloway, Count Basie, and Sammy Davis, Jr. Once lined with stately mansions, the street will now become a focal point of what the city hopes will be the resurrection of a long-lost neighborhood. Low-income apartments are also slated for renovation, and a shopping center will go up next door. ■

Chicago

Mies Landmark Endangered

The Mies van der Rohe-designed interior of the Arts Club in Chicago may be demolished. Preservationists have formed ad-hoc committees to block the razing (after the city's Landmarks Commission voted not to save it). So far John Buck, the developer, won't budge. Frank Gehry, James Ingo Freed, Robert Venturi, and Franz Schulze are among those architects who have signed a petition to save the area that was once called "the magnificent mile." ■



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Global

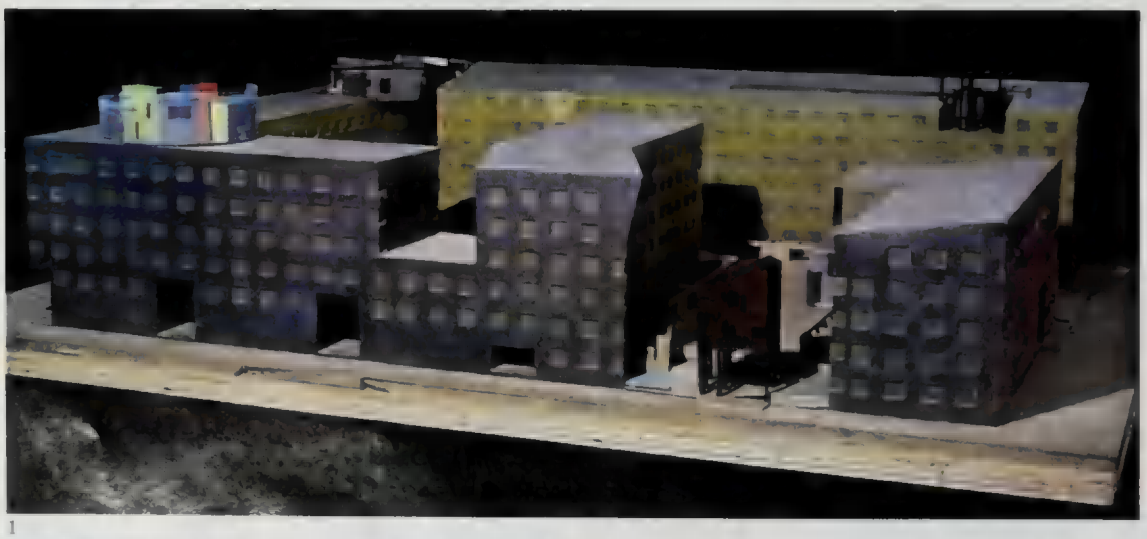
Steven Holl's Office Lull Followed by Commissions in Finland, Japan, and U.S.

The '90s have been a time of mixed blessings for Steven Holl. The idiosyncratic New York-based architect won several major commissions—including a competition over the likes of Shinohara and Alvaro Siza for the Museum of Contemporary Art in Helsinki—only to see his designs put on hold.

This month, however, construction begins on the 190-unit Makuhari housing project in Chiba, Japan; his design for the Helsinki museum has been approved, and, at home, Holl is working on an addition to the Cranbrook Institute of Science—Eero and Eliel Saarinen's first jointyly designed building.

At Makuhari, Holl was originally part of a grandiose plan to design an entire new village using world-renowned architects like Bernard Tschumi. But the project was halted when recession hit in 1992. Eventually, developers had to settle on a more humble plan: Holl's design will now stand at the center of a dozen banal housing blocks, albeit as part of a masterplan generously sprinkled with parks. Taking his cue from Paris' Place Vendôme, Holl designed a repetitive outside frame and left the design of the apartments inside to the developers. He then focused on the project's public face. Vast openings were carved out of the perimeter block to create what the architect calls "a public/private hybrid" (photo 1), Inside, there is a community center, public viewing platform, and a tea house that hovers above a reflecting pool, with elaborate apartments seemingly carved into the roofscape. Tenants must enter the courtyard first, where they circle back and pass between private bamboo gardens before entering.

In Helsinki, Holl's awkwardly poetic architecture is also part of a broad urban vision. The Contemporary Art Museum is seen as an extension of a larger cultural belt reaching back to Aalto's Finlandia Hall. The new building is designed as two bars—one that is twisted and wrapped around the end of the other (2). The interstitial space at one end becomes a sweeping entrance and lobby (3).
Nicolai Ouroussoff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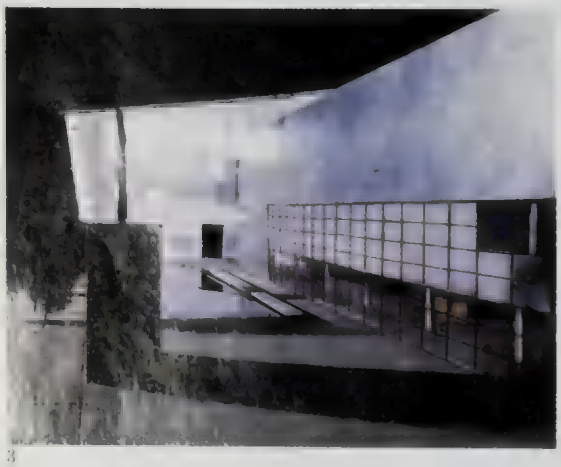
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Honors and Awards

1995 AIA Awards Go to13 Projects

The 13 winners of the 1995 AIA Honor Awards for Architecture are:

- The Farm, Soquel, Calif., Seidel/Holtzman, San Francisco, Architect.
- Center for the Arts Theater at Yerba Buena Gardens, San Francisco, Polshek and Partners Architects, New York.
- Berth 30 Container Terminal, Port of Oakland, Jordan Woodman Dobson, Architect/Engineer, Oakland.
- Teviot Springs Vineyard, Calistoga, Calif., William Turnbull Associates, Architect, San Francisco.
- Sunrise Place, Escondido, Calif., Davids Killory, Architect, San Diego and Studio E Architects, Associate Architect, San Diego.
- Hawaii's Plantation Village, Waipahu, Oahu, Spencer Mason Architects, Inc., Honolulu.
- Seiji Ozawa Hall at Tanglewood, Mass., William Rawn Associates, Architects, Boston.
- Advertising Agency Project, New York City, Vincent Polsinelli, Architect, New York.
- Jacobs Field, Cleveland, HOK Sports Facilities Group, Kansas City, Mo.
- Arrow International, Reading, Pa., Kallman McKinnell & Wood Architects, Boston.
- Cibolo Creek Ranch, Shafter, Tex., Ford, Powell & Carson, Inc., Architect, San Antonio.
- Westendstrasse I, Frankfurt am Main, Germany, KPF, New York City, Architect; Nagele Hofmann Tiedemann + Partner, Associate Architect, Frankfurt am Main.
- Hong Kong Stadium, HOK Sports Facilities Groups, Kansas City, Mo., Architect.

- Three students were awarded $3,500 in cash prizes in the 1994 Student Design Competition sponsored by the Society of American Registered Architects (SARA). They were: Michael James Striegel, Georgia Institute of Technology ($2,000); Brion M. Kean, University of Miami, ($1,000); and Fred Patterson Mason, Jr., NJIT ($500).

- Winners of the Portland Cement Association's Concrete Building Competition are: Antoine Predock, classroom/lab/administration building, Cal Poly; Ralph Allen & Partners, Century High School, Pomona; Simon Martin-Vegue Winkelstein Moris, Oceanside Water Pollution Control Plant, San Francisco; A. J. Diamond, Donald Schmitt & Company, Richmond Hill Central Library, Ontario, Canada; Lomax/Rock, Associate Architects, Rice Residence, Santa Monica.■

Design

Briefs

- Cesar Pelli (above) has won the American Institute of Architects Gold Medal. The Argentinian-born architect was cited for his ability to create commercial buildings "that speak with an urban and civilized voice." Dean of the Yale University School of Architecture from 1977 to 1984, he is best known for his design of the Museum of Modern Art expansion and the World Financial Center, both in New York City. Current projects include the new North Terminal Building at Washington International Airport.

- The Royal Academy in London has named Glasgow "UK City of Architecture and Design 1999." Glasgow won out over Edinburgh and Liverpool and is expected to reap $160 million in generated income. The announcement, made by Richard Rogers, came after two years of heavy lobbying by the three contending cities.

- Completion of Frank Gehry's Disney Hall in Los Angeles will be delayed at least a year due to rising costs, and construction on the 2,300-seat hall has been halted. The cost of the project is estimated now at $260 million.

- The Austin Company of Cleveland and the Duell Corporation of Los Angeles have been chosen to design and build a $43 million "American-style" theme park in downtown Shanghai. The park—divided into Dutch, French, Swiss, and ancient Roman villages—will be a first for the People's Republic.

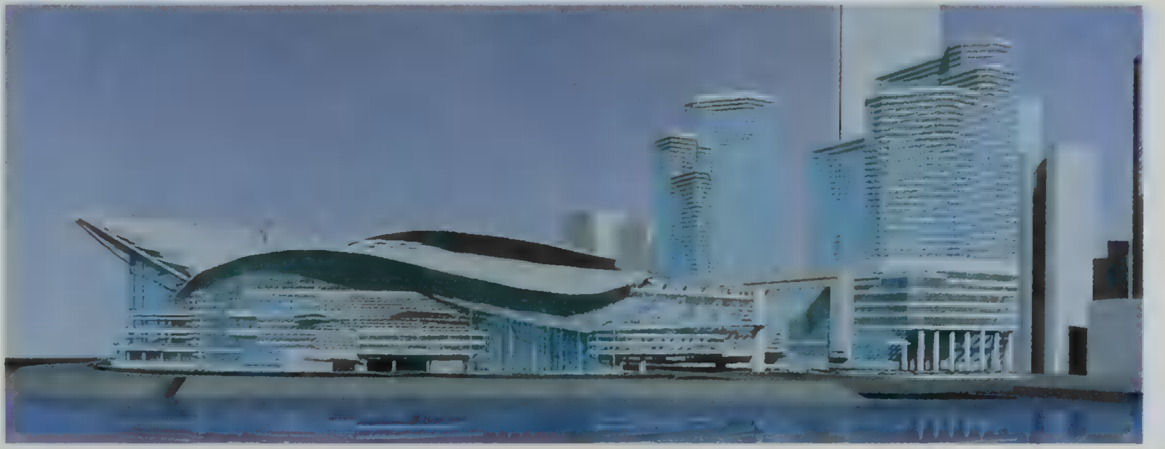
- The University of Wisconsin Milwaukee presented its Community Partnership Award to Robert Greenstreet, dean of the School of Architecture and Urban Planning, and a group of faculty and students for establishing the Inner City Studio. The studio trains city high-school students in building renovation.

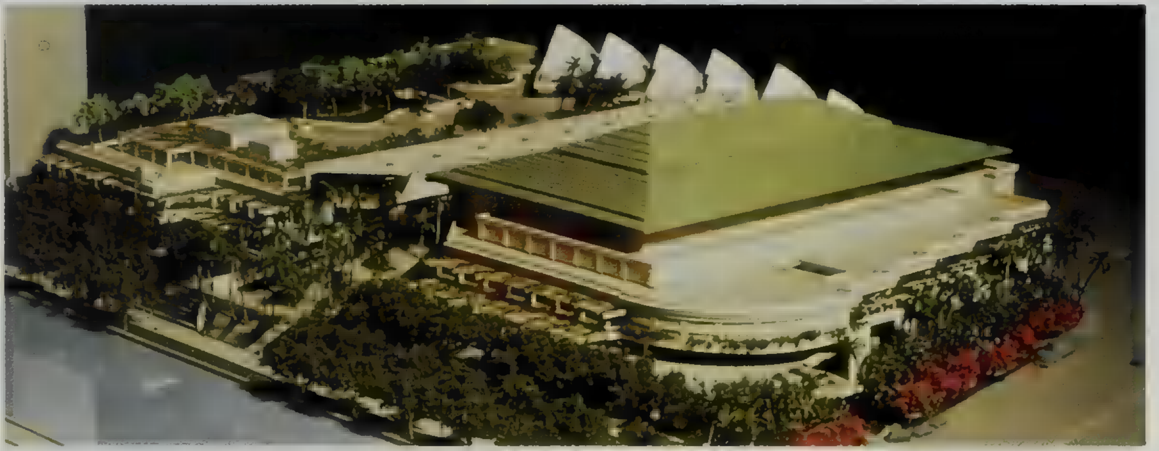
- The Denver Art Museum is opening new galleries for its architecture and design collections. Five rotating galleries will house one of the largest U.S. design collections.

- Daniel Libeskind's proposal to renovate the monotonous housing blocks in East Berlin by using "ecological design intervention" (water treatment assessment, building orientation) has won him first prize in the international Landsberger Allee competition.■

Pacific Rim

Hong Kong Harbor and Hawaii Home to Deluxe Convention Centers





Two giant Pacific Rim convention centers are in the works: a capacious SOM-designed convention center expansion perched on an artificial island in Hong Kong harbor and a sprawling, luscious extravaganza on Waikiki Beach in Honolulu. SOM's version of convention heaven in Hong Kong (top photo) sits 300 feet off-shore. A multilevel bridge links it back to the original structure, with a vast undulating roof enclosing the space. The project, including land reclamation, will cost an estimated $390 million.The $200-million Waikiki convention center (bottom photo)—designed by Loschky Marquardt & Nesholm and engineered by Skilling Ward Magnusson & Barkshire—is said to be the biggest public-works project ever in Hawaii. Poised at the edge of the hotel district, the 1-million-plus-sq-ft building is a veritable indoor oasis, with cascading waterfalls, taro plant-filled ponds and towering palms. Construction on both centers begins this month. ■

New York City

Bob Stern Bats 500

This time Robert A.M. Stern's success has caught him by surprise: the response to his design for a prototypical home featured on the cover of *Life* magazine last June was so overwhelming that the designer had to whip up a set of construction documents. *Life* set up an 800 number and has sold over 500 sets of drawings at $500 a pop. *Life* and Stern "will...consult" about other models-by-mail.■

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Books from a Master Collaborator

Chambers for a Memory Palace, *by Charles Moore and Donlyn Lyndon. Cambridge: MIT Press, 1994, 256 pages, $30.*
Water and Architecture, *by Charles Moore and Jane Lidz. New York: Harry N. Abrams, 1994, 224 pages, $60.*

Reviewed by Nancy Levinson

One of the more extraordinary aspects of Charles Moore's career was its collaborative energy. Through four decades of peripatetic designing, teaching, and writing, Moore maintained close associations with former partners and students across the country, associations that resulted often in buildings and occasionally in books.

It is fitting, then, that his legacy, in the year since his death, includes not one but two noteworthy literary collaborations. *Chambers for a Memory Palace* reunites Moore with his longtime colleague and friend Donlyn Lyndon (their previous collaborations include the Sea Ranch condominiums of the mid-1960s and the 1974 book *The Place of Houses*). *Water in Architecture* brings together Moore's writing with the photography of Jane Lidz.

Chambers for a Memory Palace is the more substantial work. It is an engaging and heartfelt dialog between the two authors, constructed as an exchange of letters in which the architects trade observations on the design of places they love and believe to be significant and instructive. Moore and Lyndon structure their correspondence around a series of "themes" and "compositions," which they identify by architectural elements and by their actions or effects. Their themes, for instance, range from "Axes that Reach/Paths that Wander" to "Openings that Frame/Portals that Bespeak" and "Light that Plays/Shadow that Haunts/Shade that Lulls." Compositions include "Rooms that Define/Space that Leaks Up into the Light," and "Shapes that Remind/Ornament that Transmits, Transforms and Encodes."

To illustrate these themes and compositions, the architects draw on their experience as practitioners and their wide knowledge of world architecture; thus the letters contain discussions of Sea Ranch and the Beverly Hills Civic Center, but also of the Acropolis, the Alhambra, Italian hills towns, Machu Picchu, Stourhead, Japanese gardens, the Cranbrook Academy of Art, Ronchamp, and more. *Chambers* is modest in style and presentation; the authors present their ideas informally, even anecdotally, and illustrate them simply with their own free-hand sketches. But the book is as wise as it is understated, carefully balancing detailed descriptions of places with the kind of confident and provocative insights—on diverse subjects, including the difference between Christian and Islamic ideas of architectural order, the role of ornament in buildings and of openings in walls, the importance of complexity in life and art—that result from many years of designing, studying, and empathetically observing buildings and landscapes.

Of the main piazza in Siena, Italy, Lyndon writes, "The great slope of the Campo tips its users into view of each other and joins them together in a memorable communal scene."

The correspondence conceit does become strained occasionally. It is unlikely that Charles Moore, in a letter to Donlyn Lyndon, would have felt the need to identify a famous 20th-century architect as "the Viennese Adolf Loos." Nonetheless, the letter-writing format works nicely; it gives the writing a warmth and immediacy too rarely found in books on architecture. Indeed, what makes this book so delightfully distinct is its authors' readiness to respond to architecture emotionally and passionately, as well as intellectually, and then to trust their responses and share them with the reader. In the middle of Moore's learned and succinct discussion of the Acropolis, for instance, it is lovely to read that "[at] the point in the Propylaea where the view unfolds," the architect gets "weak in the knees."

At Princeton University in the 1950s, Moore wrote his doctoral dissertation on the topic of water and architecture. One of the chambers of his memory palace contains "Waters that Pool and Connect." *Water and Architecture* provided him yet another occasion to explore the subject he found so fascinating.

It would be easy to dismiss *Water and Architecture* as yet another lavish and lulling picture book, an expensive, large-format browse through such great but familiar places as the Trevi Fountain, the Villa d'Este, Venice, Bruges, San Simeon, Fallingwater, et al. Responses to photographs are, of course, very personal. Although technically impressive, Jane Lidz's color photographs, which make up the bulk of the book, seemed to this viewer over-pretty and predictable. Nonetheless, their presentation here is effective and intelligent, allowing us to make useful connections between, for example, Renaissance gardens and modern plazas, classical Greece and contemporary Hong Kong.

Moore's contribution of six graceful and erudite essays gives the book substance. Beginning with a history of the meaning of water in architecture, and progressing to subjects such as fountains, canals, rivers, and seas, his text combines interesting technical details (for instance, on the mechanics of fountain design) with discussions of how great (and sometimes anonymous) designers have used water's tactile and sensory qualities to make memorable places. These essays may provide inspiration as well. By the end of the book, when Moore writes that "[t]hrough the careful arrangement of water and architecture, we can create for ourselves a place in the nature surrounding us . . . ," the reader may very well long to design a great water garden, and maybe a fountain or two. ■

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The New Urbanism: Toward an Architecture of Community, *by Peter Katz. New York: McGraw-Hill, 1994, 288 pages, $50.*

Sometimes called "neo-traditional" planning, the work of Andres Duany and Elizabeth Plater-Zyberk, along with that of Peter Calthorpe, Daniel Solomon, and Elizabeth Moule and Stefanos Polyzoides shook up the architectural profession in the 1980s by daring to imitate the past. Reacting against the cul-de-sacs, strip centers, and developer "pods" of the post-World-War II suburbs, this new generation of architects and planners applied lessons culled from 19th-century American towns to places such as the town of Seaside in Florida, the Kentlands project outside Washington, D.C., and the Laguna West development south of Sacramento.

In *The New Urbanism*, Peter Katz provides an excellent overview of the ideas and work of these designers. While several books published in the last few years have covered similar terrain, this is the first to look at the full spectrum of neo-traditional planning under way in the U.S.—and not just the work of one or two of the key firms. It is also the most straightforward and best looking of all the books to date.

The book includes a series of short essays by key figures in the movement and then profiles 24 projects both built and on the boards. While the most prominent work of the new urbanists has been in the suburbs or exurbs, the book does a good job of showing some of the group's urban projects too.

Extensive use of color makes the site plans and drawings in *The New Urbanism* so much easier to read than the mostly black-and-white images found in Duany and Plater-Zyberk's own book, *Towns and Town-Making Principles*, published by Harvard's Graduate School of Design in 1991, and Calthorpe's two books—*Sustainable Communities* published by Sierra Club Books in 1991 and *The Next American Metropolis*, issued by Princeton Architectural Press in 1993. Katz's book also benefits from showing photographs of built projects like the Kentlands and Laguna West that were still on the boards when the earlier books came out.

Essays by Katz, Duany and Plater-Zyberk, Calthorpe, Moule and Polyzoides, and Todd Bressi in *The New Urbanism* do not break any ground left unturned by previous books, but together they offer a useful primer on the goals, principles, and techniques of this group of planners. But because all of the essays were written by either participants in the movement or advocates of it, the book lacks the critical distance that could have made it a truly analytical review of what the neo-traditionalists or new urbanists are doing.

A closing essay by Vincent Scully, Jr., does provide a more analytical look at the accomplishments and weaknesses of the movement, including comments on its mostly suburban focus and the dearth of affordable housing in its built projects. But Scully is the proud father figure of the movement, having taught Duany and Plater-Zyberk at Yale, and is hardly a dispassionate observer. My major problem with the essay is how similar it is to the one he wrote for Duany and Plater-Zyberk's 1991 book. *Clifford A. Pearson*

Making Better Places: Urban Design Now, *edited by Richard Hayward and Sue McGlynn. London: Butterworth, 1993, 154 pages, $45.*

Reviewed by Katherine Kai-sun Chia

Assembled by Britain's Joint Centre for Urban Design (JCUD), *Urban Design Now* discusses contemporary approaches to practice and theory, looking at changing conditions in downtowns and on the urban fringe. Its all-encompassing title, however, is misleading. Many of its contributors—professors and graduates of the JCUD—focus on issues that recall the City Beautiful and Garden City movements of the late 19th and early 20th centuries. Perhaps for Great Britain, which spawned these movements, the book represents a reasonable approach to repairing the damage recent growth has done to existing, often historic, urban areas. But in the U.S., where urban growth is often fragmented, sprawling, "stripped" or "malled," the book's focus seems less appropriate.

Urban Design Now avoids a rigorous analysis of the forces shaping cities today, other than social ones. Discussions are limited to a particular circle of names, with Kevin Lynch and Jane Jacobs being the inspiring figures. Many of the "good" examples shown in the book are of townscapes and rarely include buildings over five stories tall.

But by substituting the word "suburban" where "urban" is used, we can better appreciate the book's applications in the U.S. For example, in the context of the suburban, Ivor Samuel's essay on business and science parks becomes relevant to conditions in the U.S.

An essay by Georgia Butina Watson is the book's only historical overview of Britain's urban-design past; too bad it surfaces in the middle of the book. The essay also does a thorough job of comparing the evolution of the Canary Wharf and Broadgate projects in London to that of Boston's Central Artery. Other articles, however, read as urban-design-school primers or suggest methods whose applications are limited.

The book might be useful in the U.S. in its advocacy of participatory planning. Editor Richard Hayward presents two methods used by the JCUD to promote community discussion: "rationales," which are clarifications of a dialogue on paper, and "tissues," diagrammatic overlays of existing and envisioned conditions. These methods could help planners on both sides of the Atlantic lure more people into the process of urban change and elicit more complete visions of the places we build.

Katherine Kai-sun Chia practices with the Maya Lin Studio in New York.

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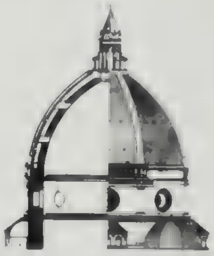

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Books *continued*

Rediscovering Art Deco U.S.A., A Nationwide Tour of Architectural Delights, *by Barbara Capitman, Michael D. Kinerk, Dennis W. Wilhelm. New York: Viking, 1994, 224 pages, $40.*

Reviewed by Felix Drury

Barbara Capitman was the lifeguard who sprang off Miami Beach in 1976 to rescue the city's Art Deco heritage and assist in the founding of Art Deco societies across the country. She died before her national survey of Art Deco art and architecture was complete, but two of her associates, Michael Kinerk and Dennis Wilhelm, continued collecting and sorting the amazing material which makes up this book. Most of the handsome photography is by Randy Juster.

What this book reveals is a thick, if unacknowledged, layer of brilliant design which produced an era's worth of buildings as entertainment. Forget the emergence of new structural systems, of serious social missions, of stylistic reincarnation; Art Deco tried to amuse, impress, and advertise much like the new world of Hollywood with which it grew up. Commonly thought of as superficial, American Art Deco has gone largely unrecognized. Ada Louise Huxtable is quoted in the book as saying, "Art Deco. . . is primarily the art of the skyscraper age. As such it is extraordinary that these structures have been systematically excluded from the modern architecture textbooks or relegated to footnotes."

The authors have created a chatty, wide-ranging book, somewhat like a scrapbook, revealing a mass of information about Art Deco without boiling it down over the flame of academic rigor. Who cares if all kinds of questionable material is thrown in? Better to give Art Deco imaginary roots even at the risk of drawing in Mies and Wright, than to leave it unclaimed by architectural history.

The authors have put the book together in a curious way: city by city, listed alphabetically, so the effect of regionalism is lost. They have also omitted plans and show most buildings in isolation. Text is seldom linked to illustration and much of the text is without illustration. Carping aside, just having this panorama of Art Deco U.S.A. is eye-opening and encouraging at a time when architectural design is floundering between beliefs.

Felix Drury is an architect in New Haven.

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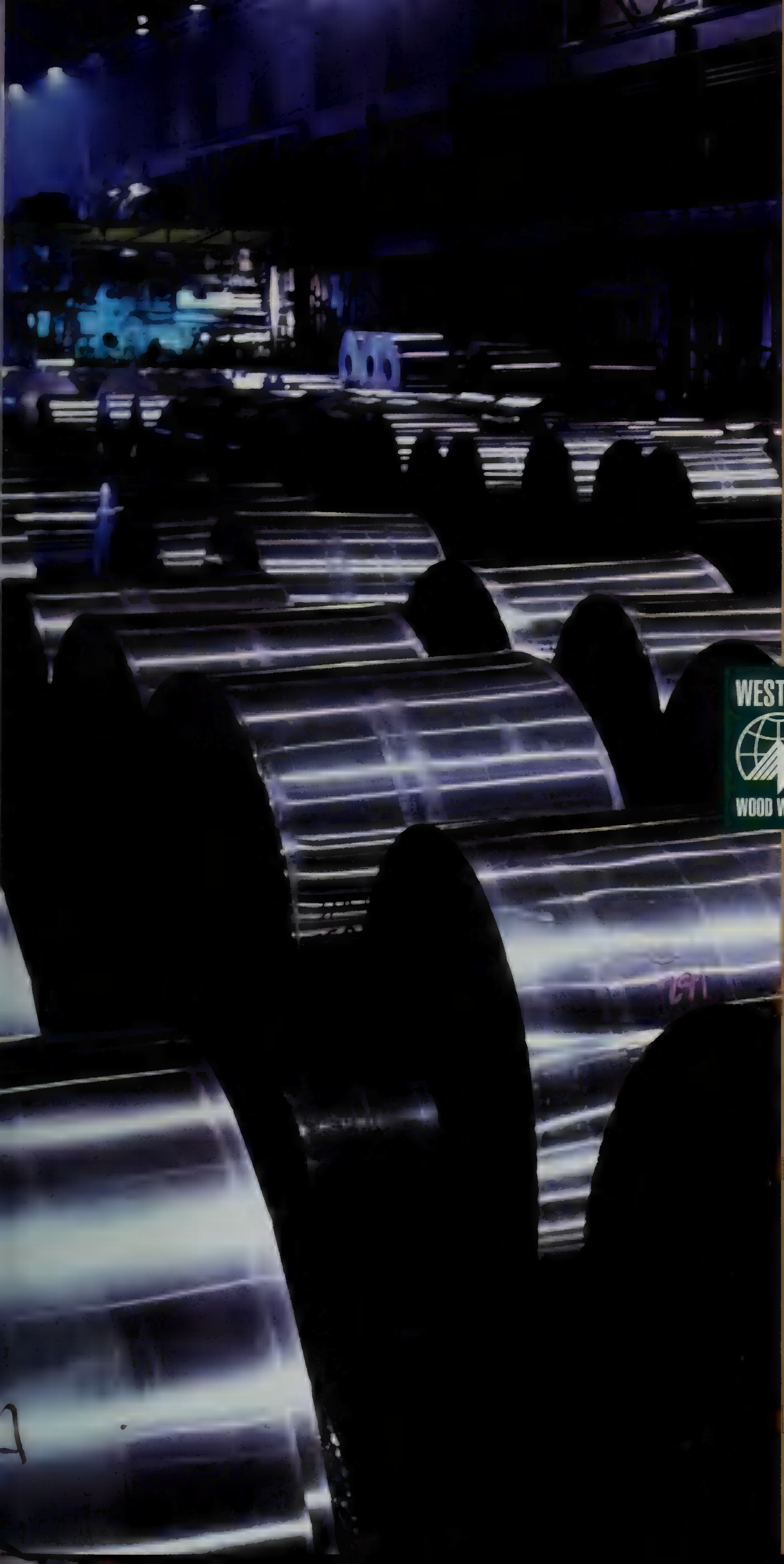

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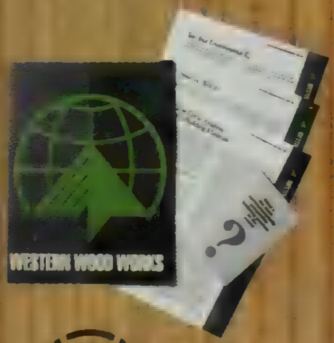

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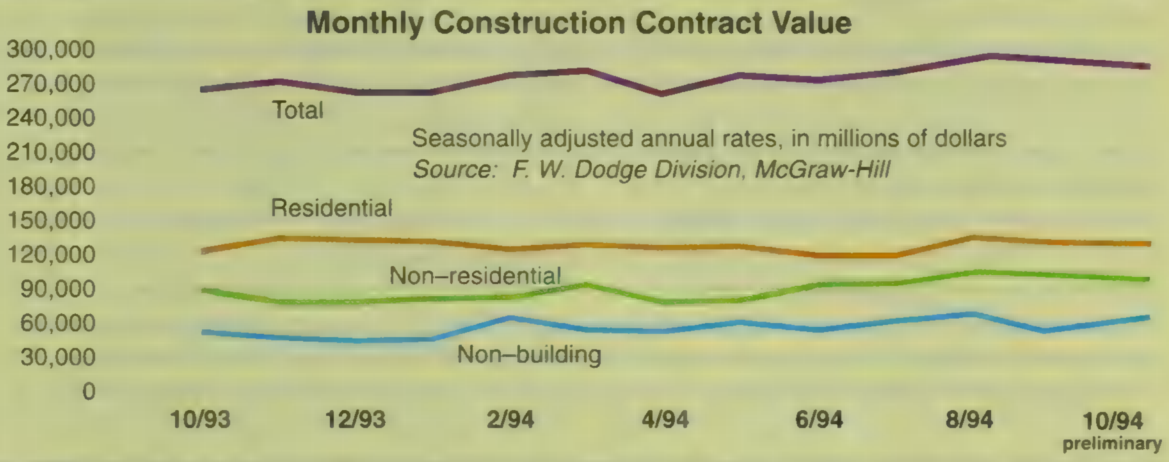
Indicators

Housing drops; other categories slip

Reacting to rising interest rates, residential construction led the third-quarter slide in construction. The drop in single-family (below) was leavened somewhat by rising multi-family construction (bottom). Non-residential construction is slipping too—even once-robust retail weakened. Warehousing and manufacturing buildings continued to move up, as did public buildings (led by detention facilities), which reached their highest 1994 levels. Tax receipts are up, but tax-cut frenzy may limit new public building.

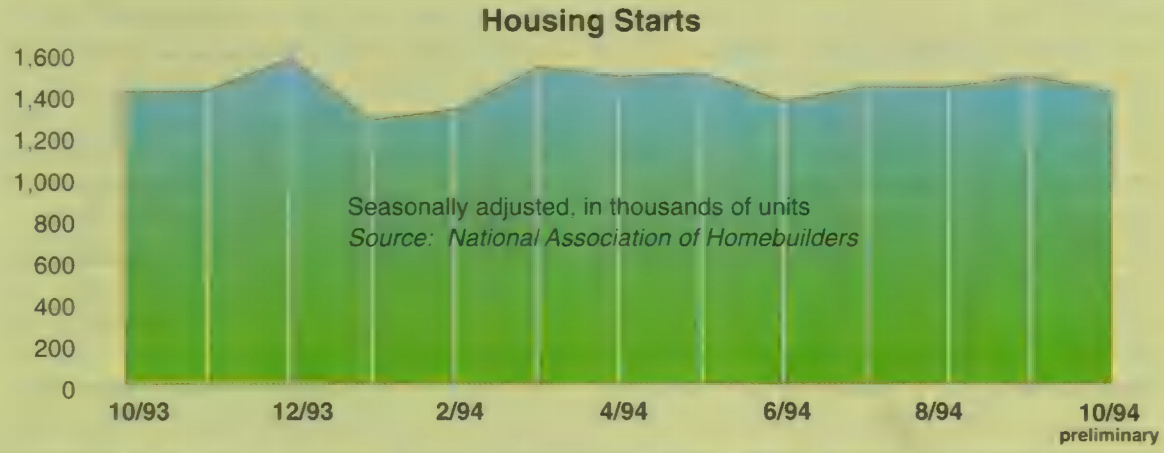


Monthly Construction Contract Value

Seasonally adjusted annual rates, in millions of dollars
Source: F. W. Dodge Division, McGraw-Hill

Why the Fed is worried

Housing is supposed to be the most interest-rate-sensitive category of the economy. So why has there been only modest decline since the interest-rate boosts of May, August, and November? The Federal Reserve says it's because the economy is growing too fast, opening the door to inflation. Is there a reverse psychology at work, where builders and buyers are actually trying to lock-in lower costs before rates escalate more? If housing starts crash after the first of the year, the answer is yes. ■

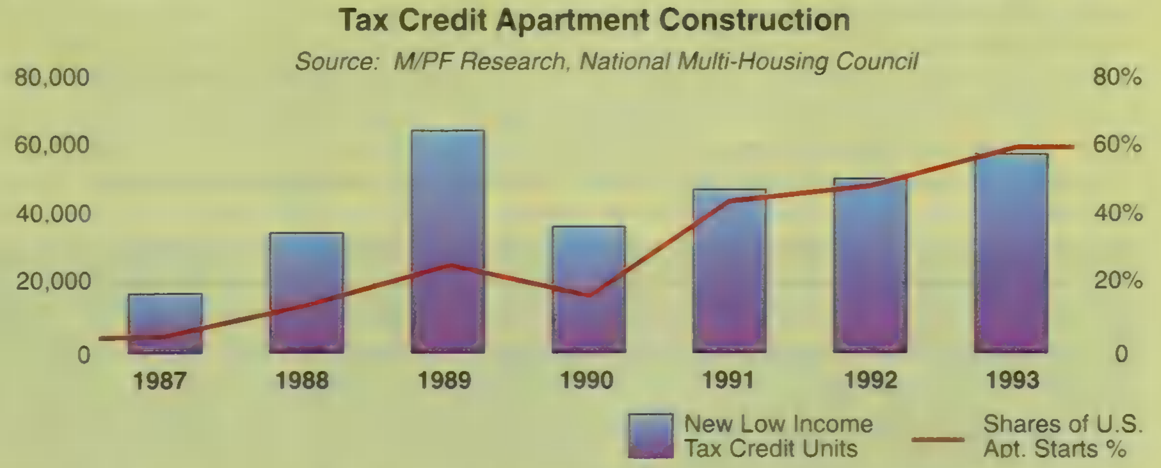


Housing Starts

Seasonally adjusted, in thousands of units
Source: National Association of Homebuilders

Low-income tax credit is hot

In spite of the complexity of such housing deals (see page 30), the tax credit for low-income housing that Congress recently made permanent is responsible for much of the recent improvement in the moribund multi-family housing sector. Despite improvement, oversupply continues to plague the market-rate sector. But demand is strong for low-income units, marketed primarily to those earning from 30 percent to 80 percent of a metro area's median income. Developments that don't use tax credits rarely target buyers below median. ■



Tax Credit Apartment Construction

Source: M/PF Research, National Multi-Housing Council

Short Takes

Budget cutters attack housing . . . As Congressional Republicans and Democrats battle to show who can cut the the budget most, housing appears a sure target. New public-housing units may be reduced to zero (from near zero); monies targeted at the "most distressed" existing public housing may also be slashed. (It's distressed because Congress neglected maintenance in the past.) **. . . and courts:** A Senate report renews criticism of GSA's courthouse-building program, calling it lavish [RECORD, August 1994, pages 24-27]. Clearly much of this is posturing. (Tile floors lavish?) Architects will have to stick up for design that assures long-term quality. Are you there, AIA?

OSHA enters the IAQ fray: Though the causes of most indoor-air-quality problems remain poorly understood, OSHA is proposing rules requiring new hvac maintenance schedules, reduction of "hazardous" substances, and segregated ventilation for smoking areas. Conservatives are targeting the rules as overkill. ■

Sustaining the Environmentally Oriented Practice

By Karen Haas Smith

Can the advantages of sustainable design overcome the perception that it's difficult, hard to manage, and expensive? Can designers get paid for their time when sustainable strategies require greater effort?

Some views from the trenches: "It's a fight. Clients that really have decided to commit are few and far between," says Jim Hadley, who has been working for the past five years to develop a sustainable design practice within Wank Adams Slavin Associates, a medium-sized A/E firm based in New York. Harry Gordon, principal at the Washington, D.C., office of Burt Hill Kosar Rittelmann Associates, agrees. "If I depended on this to make a living, I'd starve." (Burt Hill, also a medium-sized A/E firm, has won awards and publicity as long ago as the early 1980s for passive-solar and daylighting projects.) "There are some environmental aspects to many of our projects but it's not a real large portion of our business—I'd say less than 50 percent," adds Gordon. "On the other hand, clients are substantially more interested than they were a few years ago, and we do get referrals because we're known in the field." Recent projects include the headquarters for National Public Radio, which sought "healthy building" design features consistent with a focus on energy conservation. Burt Hill is also doing a master plan for a low-environmental-impact development (i.e., no cars; no paved roads) on a South Carolina barrier island.

Karen Haas Smith, of Adelphi, Md., writes about business and technical issues in the construction industry.

A unique clientele

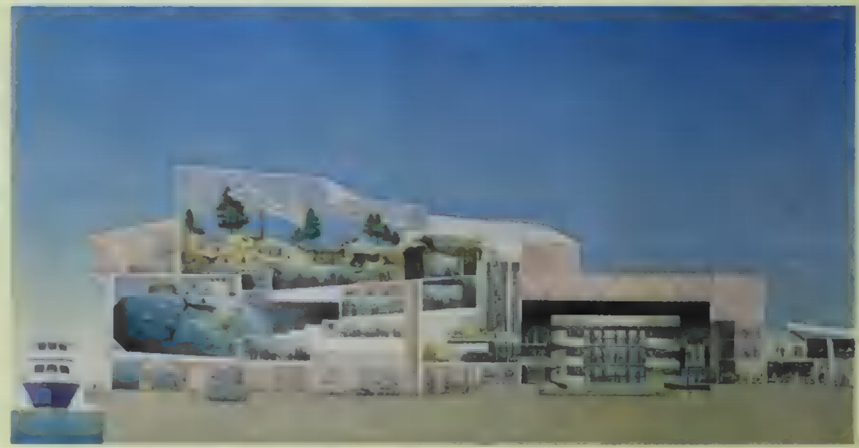
The consensus is that sustainable design is still a thin, slowly emerging market. Some, however, see impressive gains. "The volume of work is rapidly increasing," enthuses Bill Browning of the Rocky Mountain Institute, Amory and Hunter Lovins' educational foundation, which now offers sustainable-design consulting services. Browning cites large, influential companies, such as The Gap, Banana Republic, Bank of America, Wal Mart, and Walt Disney that have committed to environmentally oriented projects. "We're swamped with work," says Paul Bierman-Lytle of New Canaan, Conn., an early convert and one of the movers behind the AIA's sustainable-design efforts. He describes his clients as mostly "very wealthy," having "an environmental philosophy, and seeking something they can really be proud of." (Example: Robert Redford.)

Less affluent clients are involved, too, but they tend to be corporate, institutional, government, and non-profit groups in which commitment to the environment is key to their mission. "We're a ways away from widespread acceptance, but on the verge of an explosion of activity," says Carrie Collins, president of the Zebra Group, a Washington, D.C., marketing firm that specializes in firms associated with buildings and the environment. In some firms there's a split: The Croxton Collaborative, which arguably has the highest profile among "green" designers, is often approached by environmentally motivated executives. When it came to one office and production facility, however, the executives were "ambitious" while the building's manager was "the most pragmatic, bottom-line oriented person," reports Randolph Croxton. Croxton had to sell the manager on the energy-savings dollars, not environmental concerns or improved workplace quality.

Some markets are heating up

Sustainable-design advocates prefer a holistic approach that looks at everything from location and site orientation to the airborne emissions of paint and carpeting. Clients willing to look at projects this way remain unusual. Still, there are some hot spots.

- *Resorts:* "Eco-tourism is a good market for sustainable design," Hadley observes, "because the sites are far away from power, water, and sewer. They have to be done in a sustainable way, or they won't work." One of the early examples was Maho Bay Camps on St. John in the Virgin Islands, which Hadley designed in the 1970s for developer Stanley



In the design of a [illegible] addition to the New England Aquarium, exotic pumping and filtration systems offer the greatest sustainable design opportunities. Sophisticated glazing and daylighting will help the institution with its increasingly important environmental message (and take advantage of Boston Harbor views). Boston [illegible] Schwartz/Silver, working with the Croxton Collaborative, found a way to re-use the hugely undersized existing building (buff-colored box in images) by connecting the addition with a ramp, extending the existing exhibit path at the third level. Stacking two weighty tanks reduces the building footprint over the bay and lowers structural costs.

Some sustainable-design concepts are moving into the mainstream. Still, many advocates are struggling. What's the architect's role in maintaining the momentum of ecologically conscious design?

Selengut, who recently added a "Sustainable Development and Research Center" [RECORD, December 1994, page 21]. Now eco-tourism projects are one of the strongest client bases for most architects with credentials in sustainable design. "We feel a responsibility to expand the definition of 'eco-tourism,' which until now has been defined as low-impact travel to exotic locations," says Boston hotelier Tedd Saunders. Saunders, who has made his three Boston hotels models of environmental management, is a leader in encouraging profitable reduction of the hospitality industry's high level of energy and resource consumption. (Guests who don't mind using towels for more than one day save the Boston Park Plaza 29,000 gallons of fuel oil annually.)

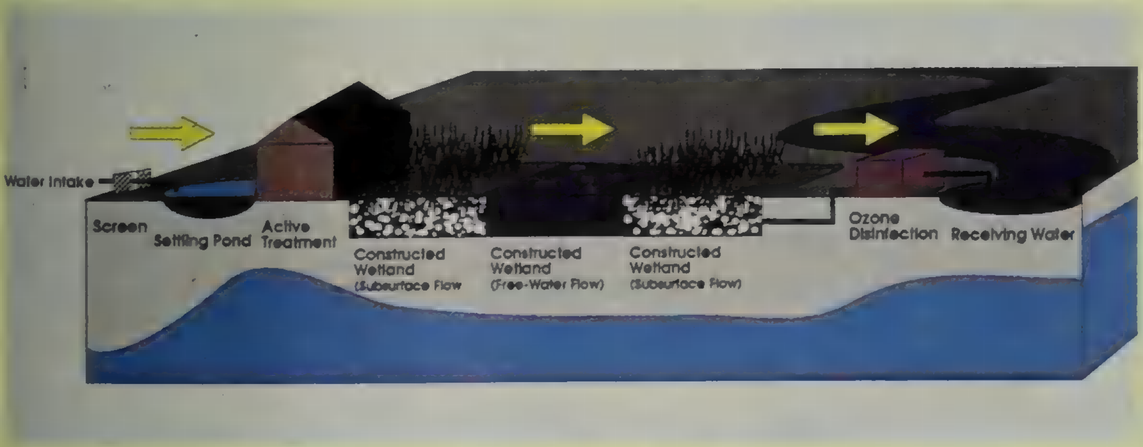
- *Lighting Retrofits:* These are popular for many reasons: they may be relatively simple, and offer quick paybacks (often abetted by utility-company rebates). When lighting *quality* is also improved, user approval and productivity can skyrocket.
- *Indoor Air Quality:* "Indoor-air quality is becoming a very hot market," says Ellen Segal, president of Segal Environmental, a Washington, D.C., firm that offers energy, air quality, and sustainable-design consulting services. Productivity gains are also becoming more demonstrable even for sophisticated hvac retrofits [RECORD, May 1994 pages 34-35]. "The market was in remedial work, but now it's proactive," claims Segal. Consultants that specialize exclusively in indoor-air quality also report that business is booming. Hillman Environmental Co. of Northern Virginia reports 30 percent of its business is IAQ-related, compared to 5 or 10 percent five years ago. Lena Gill, an architect with Healthy Buildings, Inc., of Washington, D.C., says her company has designed 2.7 million sq ft of new construction this year.

While the indoor-air-quality market is responding to widely publicized health concerns, fear of litigation is also a powerful force. Few of numerous "sick-building" lawsuits have made their way through the court system, with the notable exception of five EPA employees who won a settlement last year. Regulation, however, looms. The EPA is launching a voluntary IAQ program, and OSHA has proposed controversial regulations that could be expensive to meet (requiring special ventilation for office smoking areas, for example).

Still vaulting barriers

It's clear that some solutions are easier now. Steve Wood, of Pei Cobb Freed, feels that strategies incorporated in the firm's design for the American Association for the Advancement of Science (next page), are about to become standard developer fare. Nearly the same ideas were considered dramatic departures when first used together in offices for the Natural Resources Defense Council [RECORD, October 1989, pages 128-133]. Other barriers remain:

- *Allocating costs*: "Most things do cost more," says environmental architect William MacClay of Warren, Vt. "And it takes a lot of time to do enough research to actually know what you're doing." Though Amory Lovins, for one [RECORD, December 1992, page 16], has recommended that clients compensate designers for money-saving energy-efficient strategies, most architects—even those with demonstrable expertise—find few clients actually willing to pay for the extra effort required. Further, says MacClay, "there's the reluctance of clients, subcontractors, and contractors to do something they haven't done before. And problems with materials availability, and the greater lead times required for everybody. It's a pain in the neck for the architect, and more difficult for contractors and subcontractors."
- *Unproved, unavailable, and costly products*. Despite demand, the lack of credible product standards and consistent supply keep Home Depot from selling alternative products. "It's not going to happen that fast," says Mark Eisen, Home Depot's manager of environmental marketing. "We are stocking paints for chemically sensitive people in our San Diego stores, but even if we wanted to we couldn't stock them in all 350 stores nation-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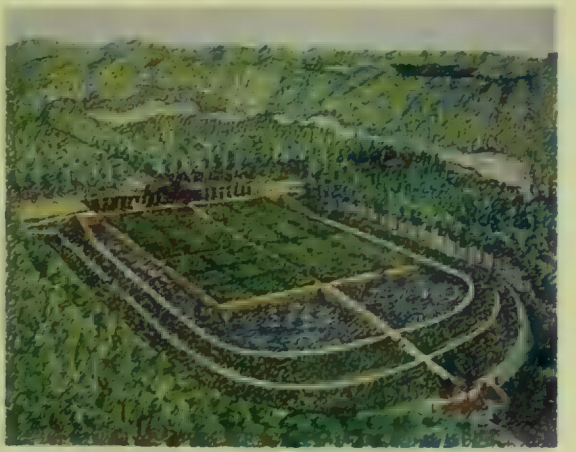
Ozone Disinfection
Receiving Water

Haymount, a 4,000-home new town, breaking ground in Spring and planned by Duany and Plater-Zyberk, adds an ambitious environmental overlay to the designers' continuing focus on reducing auto trips. Key natural features were identified for preservation (including a bald-eagle nest). Design standards include porous pavements and built-in recycling.



A "constructed wetland" is part of Haymount's sewage treatment system (above). While "polishing" effluent, it offers habitat for wildlife and an educational opportunity.

“We have to lead clients to do what they wouldn’t otherwise do,” says Susan Maxman, former AIA president. “But this is just an extension of the contextual, client-centered approach I’ve always taken.”

wide. The manufacturer couldn’t possibly fill the demand.”

At least one environmental consultant claims to be able to deliver sustainable buildings within standard price and schedule limits. “I have a background of 18 years as a developer of high-rise office and mixed-use facilities,” Ellen Segal says. “I know what’s viable. We have invested the time in getting a database on pricing and delivery times,” especially on low-emissions paint and carpet, which she sees as sellable to developers. “You can’t waste time with cottage industries.”

- *Lack of client commitment.* “We had a potential client who wanted a green design for a supermarket, but they wanted to do it on the cheap,” Hadley says. “They wanted to change a few specs and add some recycled materials and call it green. They didn’t want to look at their own recycling. They didn’t want to take a look at their energy systems. It was just a wallpaper [job].” Hal Levin, an IAQ consultant who publishes the respected *Indoor Air Bulletin*, says, “People grab at simple solutions.” Observes Lena Gill, “Most people just don’t understand what we do. It’s a question of education.”

- *Lack of architect commitment:* Ellen Segal explains: “Frankly, we haven’t seen a lot of leadership on the part of architects. A few are on the cutting edge, but most are not as knowledgeable as they should be. We’d like to see architects do a lot more. Brokers and clients are receptive, but their education is the responsibility of the architect.” Gill doesn’t think sustainable design will become part of every architect’s palette. Architects who have done the homework and become expert will be doing much of the sustainable design work—as consultants to other firms. “It’s part of the general trend toward specialization,” she suggests.

How to be part of the solution

Over 1,600 architects are members of AIA’s Committee on the Environment. Still, when the City of New York advertised recently for a designer with a background in sustainable design, many were interested but few were qualified. Bill Browning suggests that architects can educate themselves at minimal cost by becoming conversant with one or two issues at a time, applying them to each project that comes in. As the firm learns more, it can use the experience in a more integrated way as a normal part of practice.

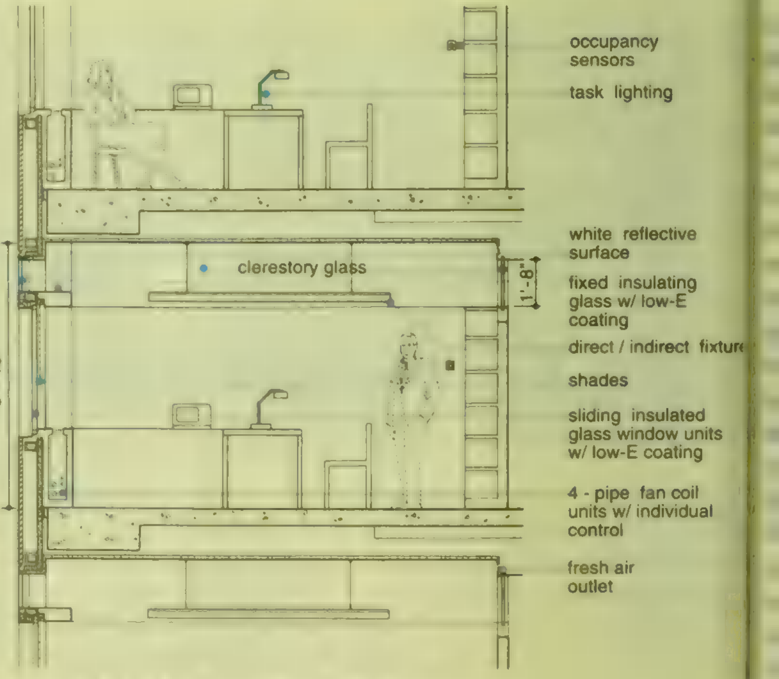
Many architects say convincing clients to incorporate some environmental features is just another part of what they do. “Most people don’t hire architects because they want design,” claims Bill Reed, a Maryland architect who markets to “sustainable” clients, but pays the bills with conventional projects. “They have to hire us to get their plans approved. So we see how much design we can sneak into a project. The same thing goes for the green stuff—it’s an additional feature. We show them that it makes sense.”

“We have to lead clients to do what they wouldn’t otherwise do,” agrees Susan Maxman. A former AIA president, she has had several successful green projects that are drawing more commissions. Maxman says she uses consultants heavily for the technical aspects of sustainable design. “We’re not the technocrats. But I have always had a contextual, client-centered approach, and this is just an extension of that.”

Where barriers are dropping

Hal Levin observes, “Some easy and effective things are being incorporated increasingly because people are coming to realize [such strategies] are not weird, and are not going to put a strain on budget and time. Commissioning is an example.” By this Levin means a structured program (increasingly, a discrete phase of the project) to ensure that complex systems are installed, operated, and adjusted to meet design criteria. Failure to properly commission buildings has been implicated in many “sick” buildings. Commissioning is also key to realizing benefits from energy-conservation and daylighting strategies.

Manufacturers of environmentally responsible building products are working hard to


occupancy sensors
task lighting
white reflective surface
clerestory glass
1'-8"
fixed insulating glass w/ low-E coating
direct / indirect fixtur
8'-10"
shades
sliding insulated glass window units w/ low-E coating
4 - pipe fan coil units w/ individual control
fresh air outlet

SECTION THROUGH PERIMETER OFFICE

break out of the "premium price" and "cottage industry" molds. T8 fluorescent tubes and electronic ballasts are no longer exotic. Now the Forest Partnership of Burlington, Vt., for example, says it will market wood products drawn from sustainably managed forests through "major distributors" at the same prices as conventional products, beginning in 1995.

Sustainable design may get a boost as research has begun to recognize that some strategies have significant productivity paybacks (right). Indeed, Joseph Romm, a former research scholar at the Rocky Mountain Institute, says his book on the subject "couldn't have been written two years ago." (It's called Lean and Clean Management: How to Boost Profits and Productivity, and was just published by Kodansha International.) "There are enough companies to document the [efficiency and productivity] phenomenon," he says, "but most companies don't know about it, and aren't doing it. It is just emerging—like the quality movement was in the early 1980s."

And there aren't always easy answers. Though developer John Clark sought to move the neo-traditional development ethos to total sustainability (page 25), the Chesapeake Bay Foundation, a local environmental group sees the project (separated from existing towns) as opening a new avenue to sprawl. ■

In a new headquarters for the American Association for the Advancement of Science (opposite), architect Pei Cobb Freed, (with the Croxton Collaborative), is negotiating sustainable strategies within mid-range commercial-development cost constraints. The design, for example, notches the building mass to bring light deeper into floors, which is paid for by innovative use of daylighting (left—made tougher by low floor-to-floor heights in height-limited Washington, D.C.) The four-pipe, individually controlled hvac system is driven by a gas-absorption chiller—unusual in tenanted buildings.

The Productivity Payoff of Energy Conservation

Companies derive an unexpected dividend from energy-efficiency upgrades, according to a report, "Greening the Building and the Bottom Line": greater worker comfort and improved productivity. These dollar savings typically dwarf those of efficiency alone. The case studies were analyzed by Joseph J. Romm of the Department of Energy, and William D. Browning, of the Rocky Mountain Institute in Snowmass, Colo. The projects for the Reno post office, Boeing Company, Hyde Tools, and Pennsylvania Power & Light achieved their impressive improvements solely through lighting retrofits, which had the initial intention only of saving energy. Key to productivity was that lighting *quality* was upgraded at the same time as efficiency. Lockheed Building 157 was highly publicized on its 1983 completion as a major daylighting effort, using a wide atrium and high windows (Leo J. Daly, architect/engineer). While daylighting techniques added $2 million to the building's $50-million cost, they paid back in just over four years. More impressively, officials credit the improved absenteeism and productivity for landing a $1.5 billion contract. Both West Bend and NMB used energy-efficient lighting, high-efficiency windows, improved insulation, and a more efficient hvac system to achieve huge savings. Individually adjustable desk-based ventilation contributed notably to productivity and is highly prized by West Bend workers. NMB's environmental image has boosted business. Wal-Mart daylit only a portion of its "Eco-Mart" prototype, but found significant sales gains in that area. Contact RMI for the report ($5): 303/927-3851, *J. S. R.*

Productivity and Energy Efficiency

Projects	**Strategies**	**Energy Payback**	**Productivity Impact**
Post Office, Reno, Nev.	Energy saving lighting retrofit	6 years; $50,000/yr.	Mail sorting productivity up 6%; lowest error rate in Western Region
Boeing Co. aircraft assembly plant, Renton, Wash.	Fluorescent to metal-halide lighting retrofit	2 years; Reduced electricity use up to 90%	Earlier detection of imperfections (up to 20% in one area).
Hyde Tool blade fabrication area, Mass.	Conversion of fluorescent lighting to metal halide and high-pressure sodium	1 year	Increased detection of imperfections estimated to be worth $25,000
Pennsylvania Power & Light engineering drafting area	Upgrade fluorescent lighting with high-efficiency lamps, ballasts, and fixtures	4.1 years; 73% drop in energy use	Drawing output improved 12%; absenteeism down 25%
Lockheed Building 157 Sunnyvale, Calif.	Daylighting	4 years; almost $500,000/yr.	Absenteeism dropped 15%; productivity improved 15%
West Bend Mutual Insurance new office building, West Bend, Wis.	Efficient lighting , upgraded shell and mechanical systems, task-based air conditioning	0 (covered by utility rebates); 40% energy savings	Up to 16% improvement, With up to 6% attributable to task air conditioning
Wal-Mart store, Lawrence, Kansas	Partial daylighting and various "green" strategies	Commissioning problems cause reduced savings	Sales per square foot "significantly" higher in daylit portion
NMB Bank, new HQ, Amsterdam	Daylighting, simple passive solar, and heat recovery	3 months	15% lower absenteeism; "progressive" image

Architectural Concrete: A Hands-On Approach Pays

Architectural concrete goes against the grain of current construction practice. Instead of being made in a shop or factory, it is formed, placed—sometimes even mixed—at the building site. This is a crucial difference, calling for a unique approach in detailing and specification.

Poured-in-place architectural concrete has at least one face that is intentionally exposed-to-view as a finished surface. Since its heyday in the '60s, the consensus about concrete's durability and suitability has changed. Sam Harris, a partner at the Philadelphia firm Kieran Timberlake & Harris, sees concrete as "inherently less durable than most common stone." For building structures, he says, "We won't use concrete horizontally without protecting it with metal or other coverage." Indeed, exterior concrete, when it is used, is increasingly precast—assuring more-consistent shop quality control and easing assembly logistics. Michael Flynn, a partner at Pei Cobb Freed, a firm known for its brilliant use of concrete, says that architectural concrete is now only designed for interiors.

Today, Flynn says, "We're interested in improving conventional concrete with an eye to making it a positive player in the architecture," but not, he says, trying to attain the level of refinement represented by the firm's East Wing of the National Gallery in Washington.

Indeed, the consensus of experienced hands is that the designer should avoid preconceptions about surface quality, and work with what contractors are capable of. "Realistically, you don't get to reject concrete," explains Sam Harris. "You can remove a panel of stone or a section of brick that's unacceptable and replace it without the repair being visible. Concrete, you pretty much have to learn to live with what you get." Among the architect's duties is to define what visual qualities are acceptable and successfully communicate that through the contract documents.

What should concrete look like?

To expect poured-in-place concrete to achieve the consistent appearance of, say, limestone is unrealistic. The surface will [illegible] be acceptable if the designer [illegible] range of some natural variation and inconsistency, and keeps in mind the distance at which the surface is viewed. "The industry is trying to say, stand 20 ft away, and evaluate the appearance," reports Paul Brosnahan, program director with AIA Mastersystems, in Washington. (He wrote *MasterSpec*'s concrete sections.) "I don't know if architects are ready to embrace that."

© John Sutton.

Cast-in-place construction met strict needs at the University of California, Davis, Quad District Parking Structure (HGHB Architects and Forell/Elsesser, engineer). 36-in.-deep post-tensioned beams span 60 ft, keeping floor-to-floor at 10 ft. Inverted T-shaped shear walls and concrete ductile moment frames resist seismic forces.

The biggest enemy of surface quality, says Sam Harris, is "air bubbles [sometimes called bugholes] and honeycomb." Cracking also affects the surface quality, and, depending on severity, can also compromise long-term durability. Cracking can be minimized or controlled by proper mix, reinforcement, and panel design.

Proper vibration should eliminate voids. It's easier to obtain bubble-free surfaces, Harris says, by using smooth-surface forms. Some surface defects are readily disguised by board-forms or other patterned surfaces. Unsightly "cold joints" (where concrete that has partly cured forms a crack at the juncture of a later pour) can often be minimized by using panel sizes coordinated to the amount of concrete that can realistically be poured at once. Evenness in color is affected by how consistently mixes are made, by the conditions of the pour, and by the timing of form stripping.

Rather than try and specify an absolute quality for the finished surface, Michael Flynn tries to determine what mix will create the best quality given the contractor's skill level. He specifies that three mockup panels be made using actual structural walls (but ones that won't eventually be considered "architectural" surfaces). From these, Flynn can choose the best mix, and define an acceptable quality of workmanship that must be duplicated throughout the project. Some architects go farther. Reginald Hough, a prominent concrete consultant who has worked extensively with Pei Cobb Freed and others, recommends that architects make their own samples to convey the desired surface quality. These then become the standard bidders must meet. Harris proposes certification of vibration-machine operators, and requires that only certified persons do the work (much as engineers certify structural-steel welders).

The mix

The needs of structural integrity take precedence, but some mix elements affect the finished surface.

- *Portland cement:* White cement gives more color possibilities, says Brosnahan, and greys often are inconsistent. More important is precise matching of cement and colorants from batch to batch.
- *Fly ashes:* These are used to replace some

Achieving a desired finish for concrete that is exposed-to-view requires special attention to mix, formwork, and placement technique.

of the Portland cement in the mix, and not all of them are stable in color, says Brosnahan.

- *Pigments:* Quality has improved; they're worth considering.
- *Superplasticizers:* Reducing the amount of water needed, these are recommended to achieve a consistent surface. Additives that retard curing are often useful in avoiding unplanned cold joints, says Brosnahan. Superplasticizers used to accelerate curing (usually to beat cold weather) can affect appearance if the timing of form-stripping is not coordinated.
- *Air entrainment:* Whether done mechanically or through additives, entrainment is required where concrete is exposed to freeze/thaw cycles.

The formwork

"Draw it, and analyze whether it can be built well," advises Reginald Hough. He even recommends that architects participate in the design of the formwork. Superior concrete is best done in a close working relationship with the contractor, which may not be possible except in a negotiated-contract format where the concrete subcontractor can be involved early.

Architects should also design panels that are sized for realistic pours. Design pour joints so they'll be disguised. (Other joints to consider: reveals placed to "design" where cracking can occur; expansion joints.) Harris recommends pour lengths not to exceed 24 to 30 ft., and says that a typical floor height is a vertical dimension that is realistic to pour at once. The architect may call out the type of form ties and their location, and specify the way form-tie holes should be filled. The pattern of form-tie holes should not take precedence over locations that assure form tightness. Poor alignment of adjacent concrete panels usually occurs because formwork was not tight enough.

Designing panels that permit form re-use is critical to economy and schedule. Standard forms come in a variety of textures and are economical. On the other hand, a real board form (versus a "board-form" pattern in a stock form) will absorb moisture in varying ways, "which creates a patina," says Hough. The construction of forms, he continues, has a lot to do with how crisply corners, joints, and reveals will turn out. "You shouldn't draw 1/4-in. reveals; you'll more likely get 3/4-in. or 1-in. reveals," he says. Form materials should be consistent, says Harris. "If you have a nice smooth metal form and use a ripped pine strip for a chamfer, you'll get a fuzzy, dull chamfer edge."

The process

Because it is so important to establish acceptable quality before pouring begins, a number of steps must be put in place, their elaborateness determined by the precision needed in the finished product.

- *Preconstruction meeting:* Hough suggests this be done "after the contractor has done basic planning, but before he commits to the formwork system. It should be after the submittal of concrete materials, but 30 days before starting the mockup." At this point all the involved parties can review and discuss difficult areas and understand the specified level of quality.
- *Mockups:* These are critical for securing agreement on overall appearance and technique. They should permit evaluation of color and surface consistency, formwork technique, and the contractor's ability to successfully avoid undervibration (which causes honeycombing), and overvibration (which causes the aggregate and the paste to separate).
- *Reinforcing:* Inadequate cover of reinforcing is commonly at fault when concrete spalls. Experts recommend a depth of 2-in. or more. Harris uses only epoxy-coated bars. Tie wires should not protrude beyond rebars (they'll rust, spalling the surface).
- *Curing:* Brosnahan notes that curing "unformed" surfaces (typically tops of horizontal planes), may proceed differently than formed surfaces, which can result in inconsistencies. Architects should also be wary of curing compounds, which can change the surface appearance, though usually only for a period of months.
- *Repairs:* Some architects regard repaired surfaces as worse than leaving defects alone. Brosnahan says the mockup can be used to choose an acceptable repair technique.
- *Finish treatments:* An acid wash or a light sandblast impart a desired surface quality to concrete, but both are constrained by environmental and safety issues. Paint will cover color defects, but will exaggerate surface irregularities. *James S. Russell*

©Tom Bernard

Kieran Timberlake & Harris used smooth forms for concrete at the University Center at East Stroudsburg University (RECORD, October 1993, pages 110-111). Granite coping stones protect horizontal surfaces exposed to weather.

Further Information

The following are available from:
American Concrete Institute
P.O. Box 19150
22400 W. Seven Mile Road
Detroit, MI 48210-0150
313/532-2600, fax 313/533-4747

Formwork for Concrete, *1989, fifth edtiion, 475 pages, $113.50*

Guide to Cast-in-Place Concrete Practice, *1991, 30 pages, $26.75*

Standard Tolderances for Concrete Construction and Materials, *1990, 22 pages, $16.50*

"The Secret to Quality in Concrete: Knowing Construction," by Reginald Hough, RECORD, March 1983, pages 129-135.

In a Growing Field, Nonprofits Call the Shots

By Charles Buki

Much of the housing being developed today for low-income people is dismal. Architects, with a unique capability to influence these projects, are both at the center of the best contemporary attempts to provide quality housing that is affordable, and on the sidelines of much of the rest of what is being developed. This apparent contradiction is the result of two basic realities.

- Many developers of low-income housing simply do not believe architects add value.
- The process of developing such housing requires highly specialized skills, which many architects lack.

In the face of these realities some extraordinary architecture has nonetheless been completed. What separates the good from the mediocre? And how can architects tip the balance in favor of quality? The answer is understanding assisted-housing practice, and offering the services housing providers value.

For many architects low-income housing represents a different way of practicing. But the rewards can be different, too. The projects discussed below are primarily developed through nonprofit community-development corporations (CDCs), which have become increasingly important in providing housing for people who fall well below median income. Some of the same techniques apply when working for either public-housing authorities or for developers of "affordable" housing (intended for clients who are close to median income). [For more on the categories of assisted housing, see RECORD, January 1994, pages 26-29]. The illustrated projects suggest various ways architects are making low-income housing work.

Quantity not quality is the focus

"Of course architects add value," argues Roger Bailey, of [illegible], a New Orleans firm that has recently begun working with nonprofits. "[illegible] ever be acknowledged as long as [illegible] reduction, and the bottom-line are [illegible] factors for assessment." The culture of [illegible]—which usually came into housing after many years of frustrating advocacy for underserved groups—is housing-unit quantity. This focus, says Bailey, "precipitates both a net reduction in the quality of the housing we do develop for low-income people, and a parallel opening for non-architects to insert themselves into the development process as de facto design authorities."

This focus is also encouraged by the National Affordable Housing Act of 1990, which, along with other legislation, made much more viable the development of housing through CDCs and the low-income tax credit. (Tax-credit projects are now a majority of the multifamily units under construction— Indicators, page 23). States are allocated a per capita number of tax-credit units. As the credit has increased in popularity, states are forced to score projects, with those that house the poorest, and the most for the least money, typically getting the nod.

According to Sam Davis, Professor of Architecture at the University of California at Berkeley and author of *The Architecture of Affordable Housing* (to be published this month by the University of California Press), the prevailing attitude views housing as a commodity. "Approaches tend to rely primarily on stimulating production." He sees such a focus as short-sighted, but recognizes such thinking dominates. "The result is a lot of housing that is affordable but little of which actually adds value to the community or inspires a necessary pride among occupants."

But the punishing cost picture is precisely what keeps more developers from using architects. Bob Santucci, President of Urban Renovators, Inc. of Arlington, Virginia, and a frequent consultant to the Enterprise Foundation says, "architects are not good cost estimators and they don't seem able to leave well enough alone. Architects never seem to understand the law of diminishing returns." Developers turn to stock modular homes for small projects and to contractors or construction managers for rehabs that involve primarily maintenance items. When architects are used, their services are often defined minimally. Many clients, for example, use architects for little more than to prepare the documents required to secure approvals.

How some architects remain essential

One successful architect whose projects connote pride of place appreciated by residents and neighbors alike is Eric Colbert of Washington, D.C. He attributes his success to four basic issues.

- *Make the best of the budget.* "We complete projects in partnership with experienced affordable-housing builders and get their advice early, in the design and construction-document phases," says Colbert. "We become essential because we add value the nonprofit can relate to."

- *Take a hands-on approach to officials.* "We primarily do rehabilitation, and getting old buildings up to the standards of new construction can be tricky and complex. Some elements will always be prohibitively expensive to change." The firm can't compromise safety and welfare issues, but meets with code officials before drawings are filed to seek needed concessions or get agreement on less-costly means for compliance.

- *Resolve conflicting needs.* "We understand the importance of keeping the end users in mind and involved during the design process. We meet with them regularly. We provide alternatives. We obtain feedback from them," says Colbert. "This requires quite a bit of refereeing." He adds, "The needs of tenants and the needs of the owner or developer are not always in sync with one another. Neither, many times, are the needs of the neighbors. When we insist on an architecture that creates 'pride of place' and 'pride of adjacency,' we invariably have to mediate the competing demands of different interests."

- *Improve whatever you can afford to.* Colbert's firm "takes advantage of any and all design opportunities." Even with the most modest renovation programs, there are important choices, including paint-color selection and hardware decisions, that can have a significant impact on the overall look and quality of the completed project. To meet budgets, Colbert encourages realistic compromises: It's routine to "convince our nonprofit group to defer some interior amenities in order to achieve a higher level of finish on the outside. Our argument is that the interior can be more affordably upgraded. The

Charles Buki directs [illegible] programs at the Neighborhood Reinvestment Corporation in Washington, D.C.

Most nonprofit housing developers don't value architects if they can't solve their most difficult problems: the budget, the regulatory- and financial-review process, community resistance.

facade inevitably remains the same throughout the life of the building." (In another example, architect William Rawn has provided hookups for washers and dryers, but deferred the appliance purchase when the budget wouldn't allow both.)

Why architects are often undervalued

On balance, the average low-income housing developer considers architects to be costly and cumbersome—therefore expendable. They are skeptical that the profession that gave us high-rise public housing can make real contributions to community development at the grassroots level. In short, community developers lack confidence that architects can help them create useful affordable housing. "We need cost control and containment, and architects don't really help us get that," Santucci says.

The prevailing view is that architects add cost to projects, when the focus is more than ever on lowering construction expense. CDCs won Congressional backing of the low-income tax credit in part by promising to deliver units at lower cost. Further, the stunning financial complexities of low-income housing deals drain so much money in "soft costs" that little is left for bricks and mortar. (Up to 47 cents of every tax-credit dollar goes to syndicators and lawyers—a scandal Congress seems loath to address.) There's also little incentive for developers to balance first costs against operating or maintenance costs—unless the developers will also manage the completed project. Thus, the focus of low-income housing has moved relentlessly toward cutting construction costs.

There may be leavening factors. But what architects typically regard as their greatest strength (design) is not necessarily their greatest potential value to the nonprofit client. "Today's reality," asserts Ralph Lippman, who is Director of the Los Angeles office of Local Initiatives Support Corporation (LISC), is that "architects in the field have to both comprehend what it is the nonprofits are after, and make contributions less defined by the ingenuity of a design statement and more by their ability to meaningfully and cost-effectively integrate people into the design process." Adds Santucci, "architects are great at understanding

Low-Cost Parade of Homes

Project: Single-family, detached homes in troubled Chicago neighborhoods.
Architects: Johnson & Lee, Ltd.
Process: What has been thought a quintessential suburban development device—the parade of homes—has been adapted by builders and the City of Chicago to promote reinvestment in neighborhoods plagued by outmigration. Most houses are three-bedroom, with simple but dignified massing, built on infill sites. Typical cost is about $150,000; government aid comes in the form of property-cost writedowns. *J. S. R.*

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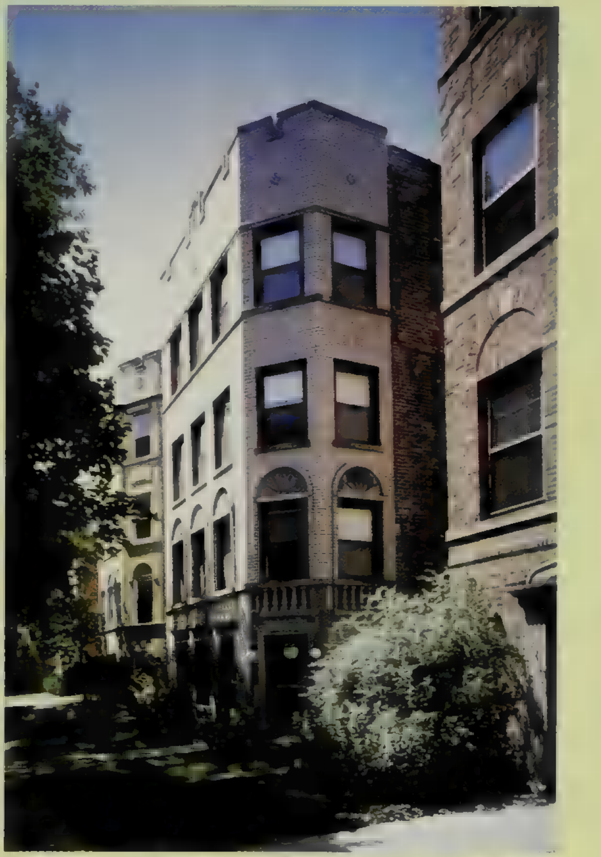
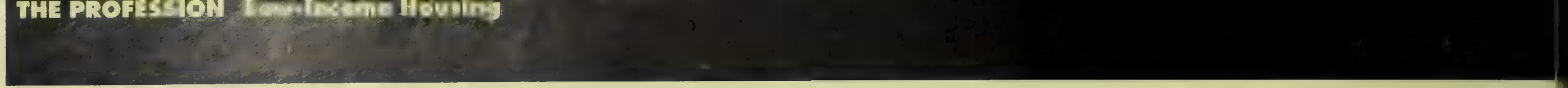


Scattered-Site Success Story

Project: Scattered-site public housing, Chicago.
Architects Bauhs & Dring, Ltd. (top); Nagle Hartray & Associates (bottom).
Process: Chicago's program of locating small public-housing developments throughout neighborhoods has been fraught with management problems. A court order brought in The Habitat Company, which has used HUD money to rehab and build new some 1,600 units using a variety of architects. Habitat values designs that fit in, winning over skeptical neighbors. *J. S. R.*



what the client wants and translating it into a form when they know the people they are working with. But most don't know low-income people very well, and thus have a tendency to design things that are unworkable in a high-security area in the inner city."

Santucci's views are important. He trains nonprofits around the country on ways to create low-income housing more efficiently.

When architects excel

Even critics, however, think architects can be very valuable. In Los Angeles, LISC has been evaluating 10 troubled neighborhoods with the National Organization of Minority Architects, the Coalition of Neighborhood Developers, and the Design Profession Coalition. "Many architects out here are very concerned with the problems of low-income people, and do very good work," Lippman comments. "After the riots, we were concerned about land use and zoning in some of the burned areas. Local architects with the Design Professional Coalition were instrumental in helping us get a start. These guys know the development process and the city bureaucracy—invaluable assets to any community developer."

The stunning complexity of low-income housing deals drain so much money in "soft costs" (as much as 47 cents of every tax-credit dollar) that little is left for bricks and mortar.

Show clients you add value

Success in affordable housing requires the architect to recognize the developer's unique needs.

•*Nonprofits often don't understand the value of design.* [illegible] are aware of the work of [illegible] but are either unaware [illegible] igned project can [illegible] ume that such proj[illegible] higher level [illegible] clients what [illegible] tangible result[illegible] overlooked. Nonprofits work in that delicate area between HUD minimum standards and tenant expectations. The architect can help the developer articulate to residents that there isn't money to do everything.

Architects, like Joan Goody of Goody Clancy in Boston, have repeatedly demonstrated the ability to design well and build affordably. With expertise in both the design constraints placed upon HUD-funded projects and in participatory problem-solving, Goody has been able to bring cohesion and flexibility to the design and development of public housing in Boston. Her knowledge not only of design, but of how communities fit together and what neighbors expect of one another, proved critical to the transformation of the Four Corners neighborhood where the firm's Langham Court was built [RECORD, July 1992, pages 92-97]. Another example of work that is better known to architects and award juries than to nonprofit clients is the low-cost rehab of a landmark housing terrace in West Philadelphia by local architect Kelly/Maiello.

•*Clients often don't know the purpose of each stage of the design process,* and that decisions present both opportunities and pitfalls. For nearly all developers of low-cost housing, design decisions are seen as occasions that cost money, not opportunities to create a better product. Michael Pyatok, in Oakland, is a successful architect of low-cost housing in part because he's shown nonprofits the value in having several options to consider during the schematic-design phase.

A high percentage of rehab work requires that work be done while tenants are still occupying units. The architect can be invaluable in working with tenants so that disruption is minimized and residents are apprised of what they'll have to do to accommodate contractors. The architect can assist the contractor and owner in defining workable logistics and a doable schedule.

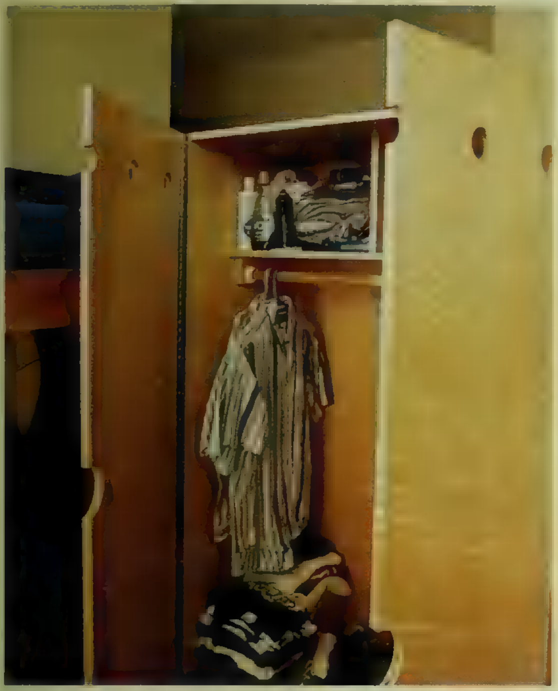
Architects can be key in assuring community acceptance of a project by recognizing broader community needs and making sure the developer knows that the project must respond to them. Nonprofits know that they obtain their imprimatur from the community, but sometimes they get distracted by the singular and sometimes conflicting concerns of a particular site and user group. While many architects respond to the visual quality of the physical context, residents and neighbors often react differently. A building configuration that appears to create opportunities for crime, or failure to fix a drug dealer-attracting abandoned building figure much higher on people's agendas than architectural amenity. Emmanuel Kelly sums up: "To do well, you have to understand the motivation of the community developer. You have to be able to establish a dialogue with the community, which requires trust. And above all, you have to be able to collaborate."

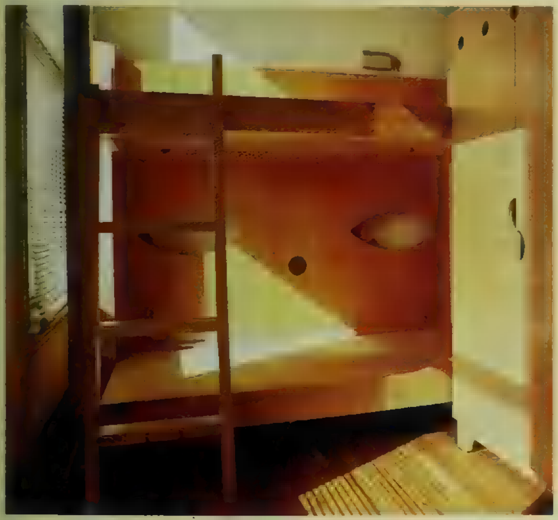
How nonprofit development works

Most nonprofit developers must assemble workable financial packages from several sources. It's the most difficult aspect of low-income housing development. The deals create real limitations on what can be designed, and architects who fail to understand the limitations consign themselves to irrelevancy.

In San Francisco, Asian Neighborhood Design (AND) is an example of a nonprofit developing affordable housing that purposefully links a design focus with sound development principles. At a recent NEA Design for Housing forum, AND's Tom Jones, an architect, said "as with all community projects, good affordable housing must exist in several prevailing environments at once. Affordable housing responds to community forces, political forces, and governmental forces. To be an effective architect in this field, one must have a firm understanding of what land costs mean, how capital is formed, who takes risk, and how risk is mitigated."

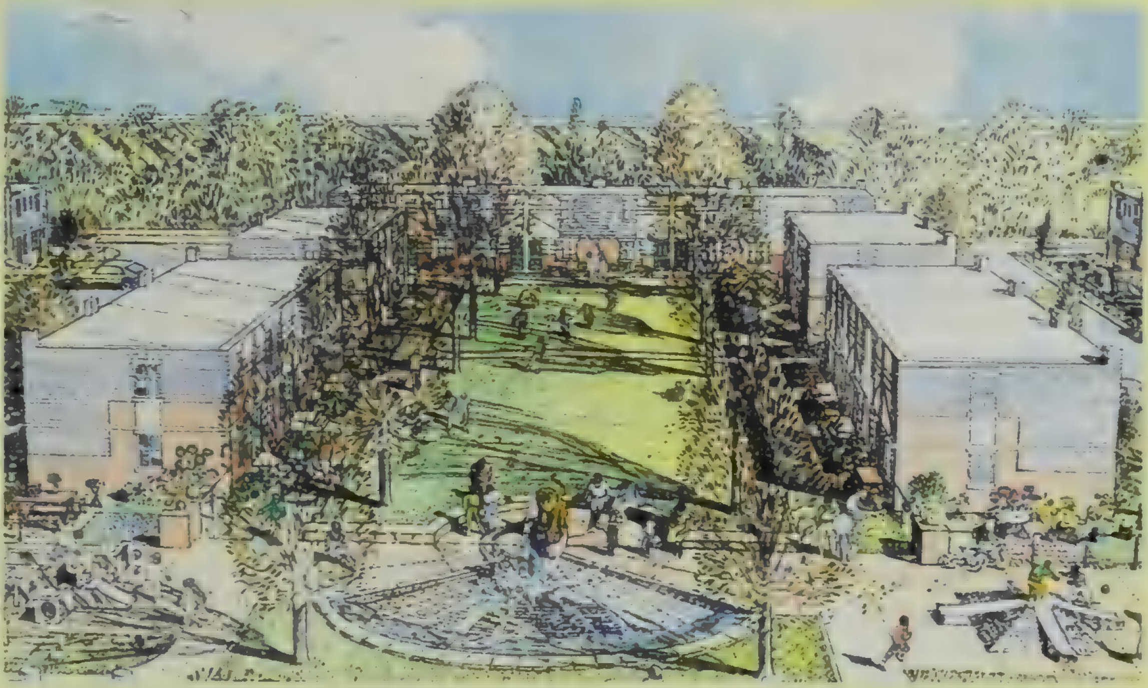
Emmanuel Kelly agrees. "A working knowledge of the cost parameters and the funding

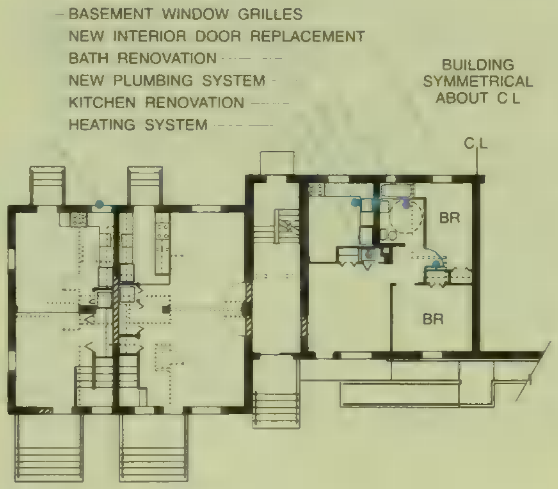




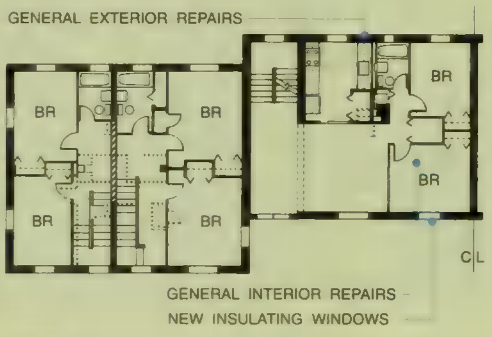
"Furniture" For Runaways

Project: Open Door Shelter, Chicago
Architect: Landon Architects
Process: Working with the tiniest of budgets, Landon Architects refit a battered Victorian-era three-story row house as a temporary shelter for runaways. The upgrade included private bedrooms (for parents with children), a kitchen, TV room, and counselors' offices. Peter Landon invented the bunkbed units shown to create semi-private sleeping spaces, so that up to 16 youths could be accommodated. The building shell was left nearly untouched, and the existing room layouts remain, though surfaces were upgraded. The bunk bed/armoires are made from wood-studs and plywood. *J. S. R.*





FIRST FLOOR



SECOND FLOOR

Rethinking the Project

Project: Passyunk Homes, Philadelphia
Architects: Kelly/Maiello with The Rothschild Company.
Process: The renovation of this World War II-era public-housing project has been on-again-off-again since 1989, but a $12-million first phase of renovations is now in schematic design. It calls for the reconfiguration of three-story slab buildings into 40 units of townhouses. The project includes sitework, utility reconstruction, and new community buildings. The original construction defined public-housing minimums: uninsulated single-wythe concrete-block construction with flat, uninsulated roofs. The exterior walls will be insulated, then faced with brick (pink in image top) and siding. Severely deteriorated kitchens and baths will be replaced (plans). Kelly/Maiello involved tenants intensively during the master planning phase. "We met with youth, with mothers, with seniors," says Emmanuel Kelly. "Residents, as well as PHA [Philadelphia Housing Authority] and HUD had to agree on priorities. The resident council was *very* vocal when things appeared not to be going the right way." For some years much of the energy was sapped, Kelly said, when promised renovations didn't go forward. The troubled PHA now has new leadership, and tenant groups are reinvigorated. Kelly is optimistic that future phases will be funded as well; the completed project should be $80 million. *J.S.R.*

process is even more important than being a good designer. And it's this working knowledge that allows for partnerships to be created." To gain a broader understanding of the development process, it's important to understand the role of key development players.

What federal agencies do

•*HUD:* Both HUD and FHA have sets of design guidelines and space standards. They're known as HUD minimums but have become—in effect—maximums. They're widely regarded as outdated and inflexible.

> *"To be an effective architect in this field one must have a firm understanding of what land costs mean, how capital is formed, who takes risk, and how risk is mitigated."—Tom Jones*

Recently HUD has offered greater flexibility for public-housing design, and permits inclusion of once-prohibited items (garages, for instance), as long as cost ceilings are met. Congress has pressured government agencies to put standards-making more in states' hands. If this happens, architects with multi-state practices will have to become conversant with each states' standards.

•*Federal Housing Administration (FHA):* The agency backs money lent by commercial institutions, and its evaluators primarily assess loan-to-value ratios (not permitting the loan amount to exceed what the agency can reasonably expect to recover in event of default). If the architect adds amenities that overvalue a project in comparison to other properties in the neighborhood, financing is jeopardized.

•*Health and Human Services (HHS):* Projects may use funds under federal grants such as the McKinney, intended to address the needs of the homeless, or funds for daycare or other on-site social services. Such projects then must meet criteria for each program (such as resident management). The nonprofit developer may not be familiar with the accompanying regulations. The spaces needed for such functions not only affect the design, they may tip the cost balance away from viability.

What state and local agencies do

•*State Housing Agencies.* Most, at minimum, require adherence to the Uniform Building Code or HUD quality standards. Many offer financing themselves, and it is the states that administer the low-income housing tax credit. As the credit has become more popular, states have devised criteria for allocating the limited credits available. Some states score projects higher that house the most people; others promote developments that house higher percentages of poorer people. This focus on quantity over quality or suitability has risks, however. By re-concentrating housing for the very poor, the ghettoization of social ills that doomed so much of the public housing stock may take place all over again. Though architects aren't to blame for this focus, they are often taken to task later when such projects fail.

Other states are taking a different tack, says James Tassos, Program Manager of the National Association of State Housing Finance Agencies in Washington, D.C. "As competition for scarce tax credits becomes more intense, some states are choosing to place greater emphasis on design issues as a way of making awards." (Oregon scores projects on solar orientation, siting, parking, attention to neighborhood context, drainage, and landscaping.) On the down side, such criteria can have the unanticipated effect of driving up the per-unit cost to the point where other funding sources find the project overvalued for its neighborhood.

•*Local Agencies:* Some offer financing, but the primary role is to administer building and zoning codes, and, in a more political way, to deal with NIMBYism. In cities where neighborhood groups control the agenda, the architect will need to negotiate amenities that please neighbors without making the project unbuildably expensive.

Private lenders' priorities

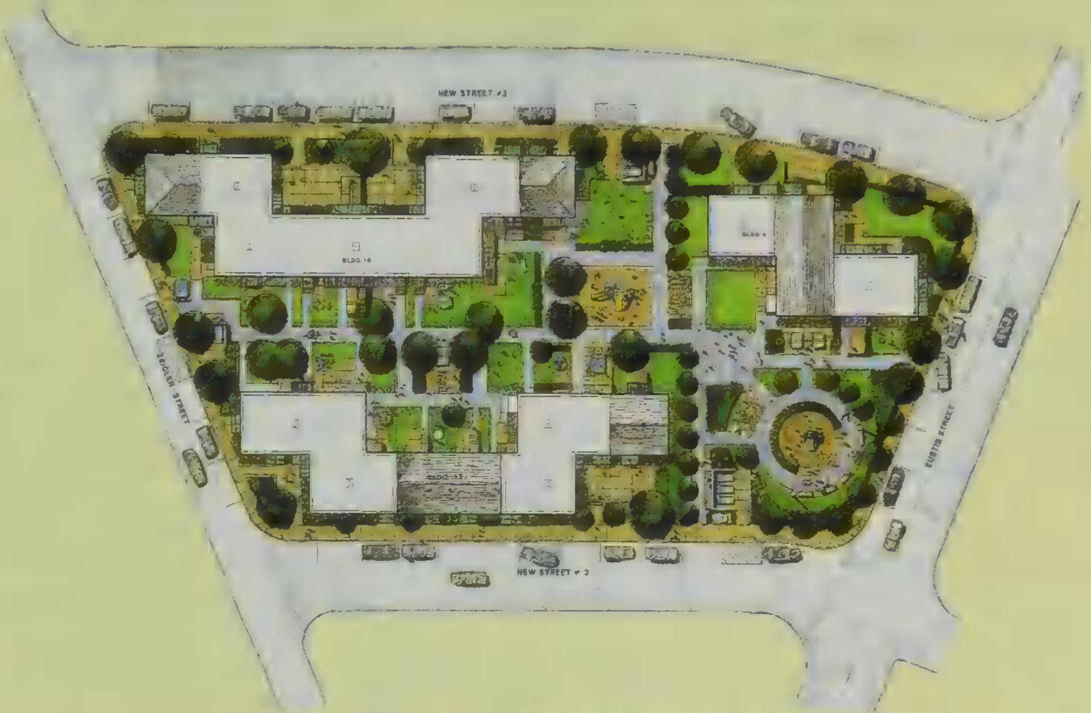
The low-income tax credit and enforcement of the Community Reinvestment Act (which pushes banks into ignored neighborhoods) is creating much higher lender interest in low-income developments. Lenders, however, must still find the loan-to-value ratio acceptable. Typically, they're more comfortable lending on 80 percent of the project's value, or less. Bankers like amenities that offer "curb appeal"—that is, help sell the project in event of default. But they don't want design that raises the loan-to-value ratio to unsupportable levels.

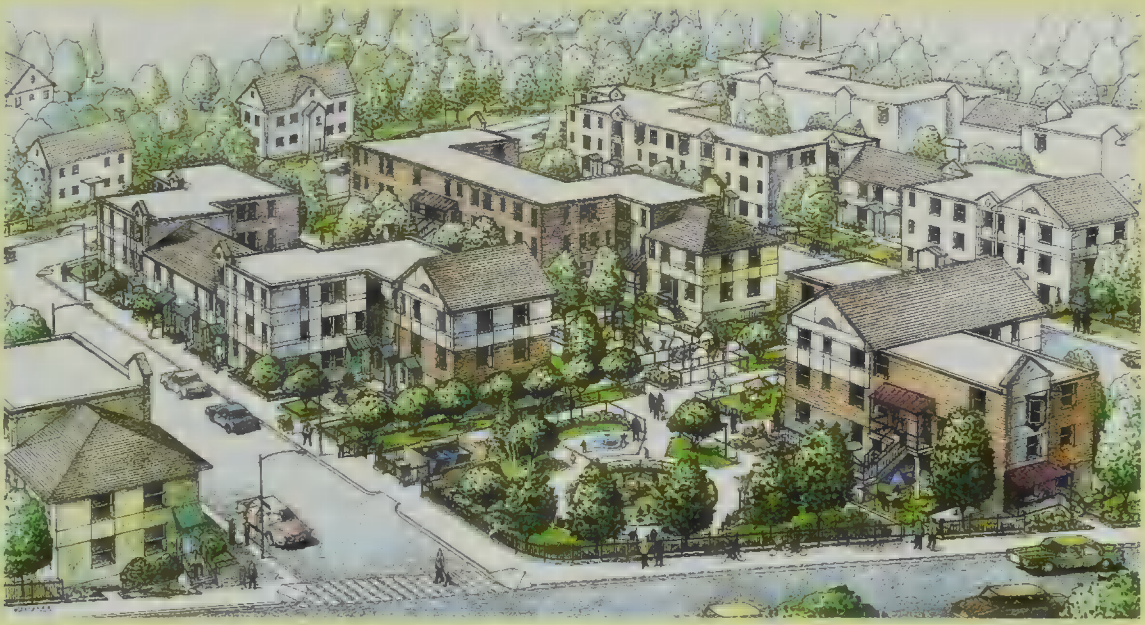
Some banks are recognizing that they actually reduce their risk by financing more than one project in a troubled neighborhood. Each project moves the neighborhood one step further from instability.

The bottom line is teamwork

"Designing affordable housing," Sam Davis writes in his book, "requires imagining clear solutions to often conflicting ideas and input; it is the artful resolution of the multiple goals, aspirations, and expectations of many different people." Housing for nonprofits is a specialty that requires a considerable commitment of time to learn the ground rules, not all of which is readily compensated.

Pyatok, for example, anticipates community opposition before it gets rolling, and uses the schematic design process to meet neighborhood concerns. Successful designers show clients that they get what they pay for, and that they have choices. A knowledge of process dispels another common client fear: that architects make all problems (and all solutions) physical. And some architects create confidence in a much less tangible way. As Eric Colbert says, "for me, [success] is achieved through dedication to the cause." ■





Mixing Uses in a Restoration

Project: Monte Cristo Hotel renovation, Everett, Wash.
Architect: GGLO Architecture
Process: Upper floors of this historic downtown 1920s hotel were converted to 69 apartments for tenants who earn 50 percent of median income or less. Financing for the $7-million project combined low-income tax credits with historic-landmark tax credits. Mechanical, electrical, and seismic improvements were coordinated to avoid disturbing finishes of important public rooms. The building has also been fully sprinklered and made ADA compliant. The main lobby (above) has been turned into an exhibit space surrounded by public offices of community groups. The city and county earn income from renting the lobby and a ballroom for receptions. *J.S.R.*

Undoing the Sins of the Past

Project: Orchard Park Comprehensive Modernization, Boston
Architect: A joint venture of Lane Frenchman and Associates, Inc., and Hezekiah Pratt and Associates
Process: Orchard Park is a low-rise public-housing project dating from 1942. In HUDese, it's "severely distressed"—in poor physical condition with significant abandonment. The Boston Housing Authority is trying to duplicate successes achieved elsewhere in renovating public housing through a number of strategies. The unit sizes will increase on average 25 percent, while the number of units decreases by 36 percent. Stairs that once served up to 12 units each will be eliminated for security reasons. Most units will have their own entrances. Some city streets will be extended through the project to integrate it better with the surrounding neighborhood. Other site areas will be reconfigured into demarcated back yards, front yards, or semi-private courtyards with a single readily observed entry. A new central commons will create a public area at a Family Investment Center, which will include recreation, health care, and other social services.

The rendering above shows the selected addition of pitched roofs and other elements that help to create a domestic image and a perceptible "ownership" by tenants (who are consulted in the design process). The clear division of public and private is shown in the partial site plan, top. *J. S. R.*

New Releases of Popular CAD Software Add Power But Hog Resources

By Steven S. Ross

This month we take a close look at Autodesk's new and long-awaited AutoCAD Release 13, and at Graphisoft's ArchiCAD 4.5.

AutoCAD 13 is one of the most powerful packages yet produced for the Windows and DOS world. ArchiCAD 4.5 is available in a Windows version, but started in the Apple Macintosh environment; it is now the most full-featured CAD solution for architects using the Mac.

AutoCAD remains a powerhouse for power drafting, but has been adding ever-more-sophisticated modeling and rendering features with each new release. ArchiCAD has been particularly strong in rendering and other aspects of presentation; its drafting features were improved greatly in this release.

In a sense, this split is due to the historical uses to which the Mac and Intel-CPU (DOS) platforms have been put. The DOS machines went to the drafting room, while those who used computers to design tended to use the Mac. It is also due to the fact that all platforms have been getting cheaper and vastly more powerful, and that more add-ons, such as fonts and printer/plotter drivers, now work through the operating environment instead of being tied to specific software. All this allows software developers to add more features to their packages without noticeably eroding speed.

It also has caused an interesting split in the marketplace on pricing. Autodesk, Graphisoft, and Bentley Systems (the MicroStation people) can command prices of $3,500 or more—actually, with volume discounts, $2,500 or so per seat in a large office—plus the cost of add-ons. If you need their features, you need them. Period. Besides, big packages need lots of user hand-holding and training; the support is built into the price. But as the less expensive packages, $500 to $800, get more powerful and user expectations rise, the big guys have to run fast to keep up.

What do you do? Analyze your needs carefully before you buy. And be willing to mix many vendors' wares in the same office.

AutoCAD Release 13

Vendor: Autodesk, Inc., 2320 Marinship Way, Sausalito, CA 94965; 800/964-6432; 415/332-2344; fax 415/491-8200.
Price: $3,750 on CD-ROM, $3,995 on 1.44MB disks. Upgrade from Release 12 is $495; from earlier versions, $695; $100 off for CD-ROM version purchased prior to January 31.
Equipment required: IBM or compatible with at least an 80386 CPU with math coprocessor; 90 MHz Pentium strongly recommended. RAM requirements vary with operating system: 12MB for DOS (5.0 or higher), 16MB for Windows 3.1, 20MB for Windows NT 3.5. We recommend 16MB for DOS or Windows, 32MB for Windows NT. Minimum installation takes 25MB of disk space for DOS version, 35MB for Windows; allow more space—and allow for 64MB permanent swap file for Windows versions. CD-ROM drive strongly recommended for installation. Versions expected in 1995 for Digital Alpha (running Windows NT), Sun Solaris, HP-UX, SGI IRIX, IBM R/S 6000 (AIX for PowerPC CPU).

The long-awaited AutoCAD 13 is out in DOS, Windows, and (within weeks) Windows NT versions. It is a resource hog, but offers many new features for easier design and production drafting, and for hooking your drawings into databases. We reviewed it in DOS and Windows versions, on networks using Novell and Windows NT/Windows for Workgroups.

Experienced users, especially of the Windows versions, will find some commands in unfamiliar places. That's because Autodesk has chosen to adopt more standard Windows menu conventions. Nevertheless, you can customize icon toolbars and position them all over the drawing window. Even the command-line window now floats instead of sitting at the screen bottom.

There's solid modeling built in, including boolean operations. This allows designers to create rough 3D shapes for sections of buildings—or entire structures—to explore design options. Hard-line drafting can be added around the model. There's a utility included for converting older AME (Advanced Modeling Extension) models to the new ACIS standard. Autodesk warns that not all AME constructs can be fully converted.

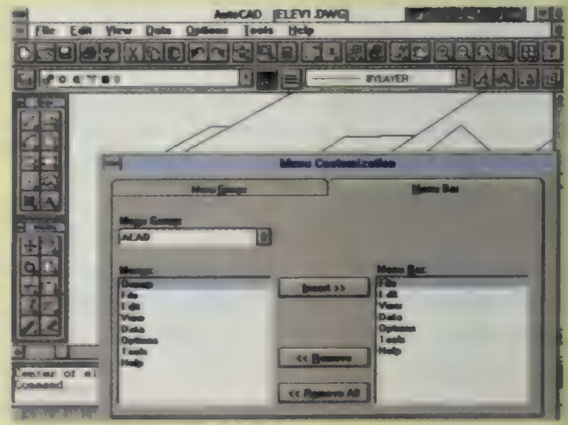
Taken together, the improvements make it easier for AutoCAD to be used at all levels in a practice—for conceptual design, production drafting, and tracking project details—and to share files on a network with other software and other, even older versions of AutoCAD.

A few warnings: AutoCAD 13 requires a large, fast computer. Whether you can phase it into an existing office over time—upgrading software and hardware as you go—depends on the nature of your practice and the compatibility of add-ons you use.

One thing is clear—now is the time to invest in a CD-ROM drive. Autodesk is charging $250 less for the CD-ROM version and $100 less for the CD-ROM upgrade. And the CD-ROM version comes with on-line, searchable documentation. Windows, Windows NT, and DOS versions are all on one CD-ROM disk in fact. So is AutoVision, a "lite" version of 3D Studio; it can be tried, then unlocked with an authorization code.

Release 13 has many "power drafting" features built in now—you no longer have to depend only on add-ons. The major new features:

- *Associative cross-hatching:* Shading in areas will automatically fill as the areas are edited. As in typical "paint" programs and Release 12, you can fill an area with a pattern



You can customize the AutoCAD 13 menus, even making them look like earlier versions. Useful for offices where many versions are used, as will be the case during phase-in.

AutoCAD 13 improvements mean it can be used at all levels in a practice—conceptual design, production drafting, project tracking—and to share files on another network with other software.

by clicking anywhere in the area. Unlike Release 12, exclusion boundaries and text are now sensed automatically.

•*Dimensioning:* Not only is setting up the area to dimension quicker (the commands are now easier to get at), but styles are more flexible (finally, stacked fractions) and can be set globally. There are good tolerancing styles built in, too—meant more for mechanical design than for architects, but good for the multi-disciplinary office.

•*Expanded entity set:* These include multiple parallel lines, NURBS (non-uniform rational B-splines—to describe complex shapes), true ellipses and elliptical arcs, and more construction geometry. You (and third-party add-ons) can create custom entities as well, including custom linetypes (some, such as wall insulation, are included with the shipped product)—even text within linetypes.

Having complex curves and linetypes as mathematical entities rather than collections of little lines (polylines) makes them easier to edit—and also makes file sizes smaller.

The construction geometry was a surprising joy. Essentially, you get two new line objects—Xlines and Rays. They extend to infinity in one or both directions and can be used as reference lines for hanging on other objects. You can set them up to find centers for objects, to become references for parallel lines, and so forth.

•*3D improvements:* Those who routinely draw and edit in 3D will see a lot of little changes that add up to more productive drafting time. Most importantly, you can draw entities in different User Coordinate Systems—whatever coordinates are easier for a specific entity and orientation—then edit them together. Two lines or planes that intersect anyplace in 3D space can be chamfered or intersect-trimmed, for instance.

You can now group objects by some logical relationship (desk and desk chair, window and hole in wall for window). Unlike block entities, you get access to individual objects. They are similar to selection sets (groups you establish by lassoing with the mouse), but with a logic you have to specify.

•*Straightforward text entry:* There's a good editor, a good spell checker, and full support for TrueType fonts and (as in AutoCAD 12) Adobe PostScript Type 1 (but not the latest Type 2). If you open a file for a certain font that's not available, you get a more-or-less automatic substitution.

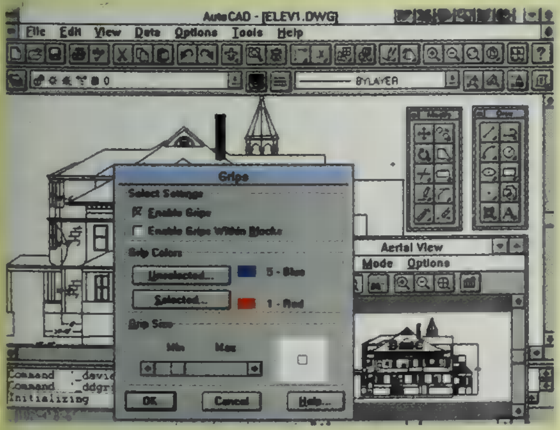
•*Faster, more realistic shading:* A materials library and a surface-materials editor are included. Autodesk is clearly pushing animation; there's direct file exchange with 3D Studio in both directions.

AutoCAD continues to become more network-friendly, and to improve sharing of files with other software. For instance, one drawing can reference another. Use the Xref command for this. (Not infrequently, people lose track of which drawing refers to which. AutoCAD does not like it when one drawing references another drawing and the second drawing references the first. Autodesk has come up with a new command that allows you to break the circular refernce without destroying a chain of painstakingly established referenced drawings. They call it the "overlaid" command.)

There's also direct reading and writing of Release 12 and AutoCAD LT files inside Release 13. Although Autodesk is not discussing it in any detail, this also means easy exchange with Release 11 as well; there were only trivial changes in file structure between 11 and 12.

Release 13 Windows versions also support OLE (Windows Object Linking and Embedding) in both directions. This is particularly important when you need to open a second drawing in AutoCAD and move back and forth between them. (Unlike version 12, you can only open one drawing in Windows or DOS in AutoCAD 13.) Using OLE, you open a drawing, select a piece of it to move to another drawing, close the first drawing, open the second, and link the first drawing's data to it . (However, we *did* run more than one copy of the Windows version in Windows NT at a time.)

Is an upgrade worth it? It depends on what you do, and the cost and functionality of any add-ons you may have. Our impression of



Select Settings
☒ Enable Grips
☐ Enable Grips Within Blocks
Grip Colors
Unselected... 5 - Blue
Selected... 1 - Red
Grip Size
Min Max

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Command _devi
Command _ddgr
Initializing
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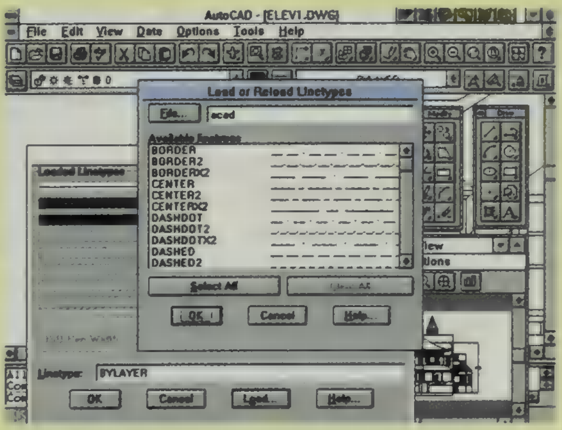
Object grips can be customized as you go -- "loose" in widely spaced, large objects and "tight" in intricate details.

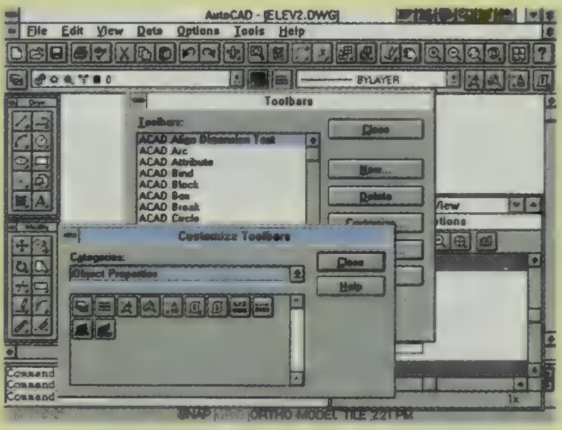


File: acad

BORDER
BORDER2
BORDERX2
CENTER
CENTER2
CENTERX2
DASHDOT
DASHDOT2
DASHDOTX2
DASHED
DASHED2

Linetype: BYLAYER

These are among the linetypes that come with Release 13. You can also create your own—similar to MicroStation.



Toolbars:
ACAD Align Dimension Text
ACAD Arc
ACAD Attribute
ACAD Bind
ACAD Block
ACAD Box
ACAD Break
ACAD Circle

Categories: Object Properties

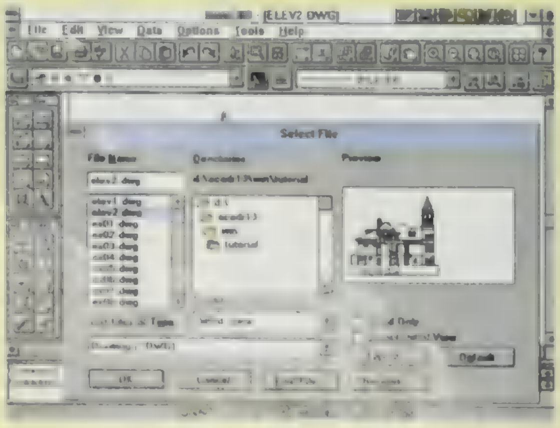
Just as you can customize menus. you can customize toolbars (palettes with drawing-tool buttons).

AutoCAD 13 is that operation-for-operation it is slower than Release 12 (which itself was a bit faster than Release 11). But it is much easier to do many functions—dimensioning, customizing linetypes, editing existing entities—particularly 3D entities or entities crowded together.

You may already be using add-ons for some of these functions, in which case AutoCAD 13 may be faster and easier to manage. Or, you may be using an add-on for functionality Release 13 still does not provide—in which case you will be paying for two upgrades.

Autodesk and add-on suppliers say add-ons for Release 13 will be faster and more seamless, thanks to the new hooks AutoCAD has—the improved Applications Programming Interface or API. In theory this should be so. But Release 13 is too new for us to have spent any time with add-ons (many are due over the next three months).

If you're just graduating to the big leagues and you intend to stay with Intel-CPU equipment (Pentiums, 486's), do you go AutoCAD or MicroStation? Both have plenty of third-party add-on suppliers. AutoCAD has more—and with this release has gone a long way in catching up with MicroStation's built-in features and network-friendliness—but there is not even close to a complete overlap between the two families of add-ons. Thus, you will want to check on which third-party applications may be best for your situation. The bottom line: The choice may depend on your dealer or on your need for a specific third-party add-on—and whether an add-on's potential file incompatibilities with other software matter.



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Manuals: On-line help and 2,500 pages of printed documentation. There are separate paperbacks for DOS and Windows installation, huge command reference, huge user's guide, another 680-page customization guide, a great 72-page master index to all the guides, and a tutorial with a fair amount of architectural material.
Ease-of-use: Complicated program—lots of functionality, lots of commands. New users will welcome the Windows-standard interface. Old users can customize command hot-keys and icon toolboxes (palettes) so Release 13 works about like Release 12.
Error-trapping: Despite some impressive dialog-box help, you will have trouble keeping track of drawings on a network—they can be referenced in two ways (attached, which is the old way, and overlaid). You will have to "save as" Release 12 in a transitional period. Some add-ons will create custom entities that may or may not lose their intelligence [RECORD, August 1994, page 30]. Autodesk itself has one solution—WorkCenter (below). You might also want to look at third-party "manager" packages such as Cyco's.
300 *on Reader Service Card*

Autodesk WorkCenter

With all the major CAD vendors crowing about the network-friendliness of their wares, and CAD files—many referenced to each other—multiplying like kudzu on the nation's hard drives, the file-management software market is growing fast.

From a beta copy of Autodesk's WorkCenter, we got an idea of where Autodesk is going. Normally, you organize your drawings by disk directory. WorkCenter allows organizing by project, discipline, drafter, designer, design phase, revision number. It also allows you to search on specific criteria to track down a document. Some functions can be done within AutoCAD itself. You can print and redline—as with many third-party managers—and view both DXF and DWG files, track files referenced by other files, etc.
301 *on Reader Service Card*

ArchiCAD 4.5 for the Power Macintosh

Vendor: Graphisoft U.S., 400 Oyster Point Blvd., Suite 429, South San Francisco, CA 94080, 800-344-3468, 415-737-8665.
Price: $4,450 (hourly rates available on experimental basis), second to ninth license for same office, $2,670. Numerous add-ons including Atlantic Render, Zoom (modeling), energy calculations, land modeling, symbols.
Equipment required: Apple Power Macintosh (other versions are available for Windows and for 600x0-CPU Macintoshes), 16MB RAM minimum, 40MB recommended; will run on 8MB of "real" memory if virtual memory enabled. System 7.1 or later.

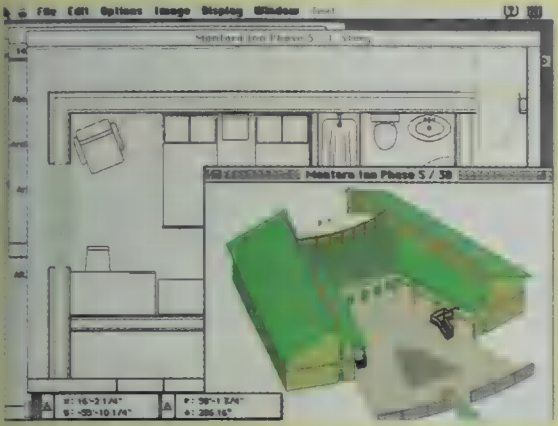
We last looked at ArchiCAD in detail more than a year ago, in December, 1993—version 4.1 for Windows. Here we look at the upgrade in its Macintosh incarnation, Version 4.5. It offers many new features, particularly for drafting, database management, and file exchange with AutoCAD. As with AutoCAD, ArchiCAD is a resource hog—it runs well on a Macintosh 6100, the smallest Power Mac (and supports digitizers connected to the Apple Desktop Bus), but only with 16MB of RAM. We did, however, run it in as small a machine as a Centris/Quadra 610 with Power Mac add-on board and 8MB of RAM.

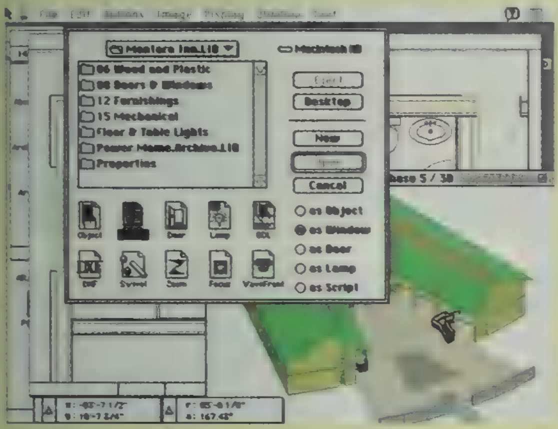
The added speed is matched by larger theoretical file sizes; Version 4.1's limit was 32,000 entities—characters, lines, other graphic elements. The limit is now 1 billion. The number of library symbol parts is now unlimited; it had been 2,000. (You can save in 4.1 format for backward compatibility if your file does not exceed size limits.)

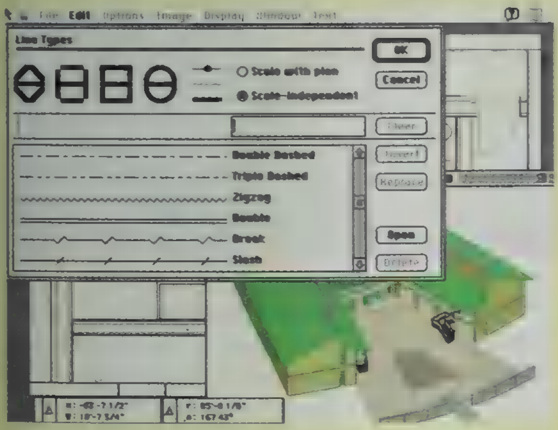
Each element gets a unique identification number that you can extract for data processing. There's also a new tool for custom or automatic labels displaying ID or user-defined text.

This version has many features that help you create 3D constructs, mainly in 2D. There's a "QuickView" window that lets you save and navigate through as many views as you want for easier recall. The Scale, Pan, and Zoom icons are now up front on the plan view. The project scale is on the plan as well.

ArchiCAD's new 4.5 version for the Power Macintosh has many features to help designers create 3D constructs, mainly 2D. It runs well on the smallest Power Mac, the 6100.







Top: Shaded 3D view on top of 2D drafting window in ArchiCAD 4.5.
Middle: Symbol libraries are easy to manage.
Bottom: Linetypes available in the shipping product.

There's a Section/Elevation tool; you can draw staggered sections and elevations directly in plan. Sections and elevations are calculated automatically and displayed in separate windows. Walls, roofs, and slabs appear as fills on section with their original fill pattern.

Starting with version 4.1 you could trim walls to roofs. Now, clicking on any element calculates its intersection with any other element. Likewise, in 4.1, you can convert lines and arcs into walls by "space-clicking" on them. With 4.5, space-clicking on any polygonal element transforms the selection to any other polygonal element (roofs, slabs, walls) and saves the original. Roofs and slabs can be visible on other stories. When above the current story, they are editable.

You can cut an element with one click, create walls surrounding a slab, and so forth. There's a new block presentation that displays an ArchiCAD project as building blocks, so you can work quickly in 3D.

The new "continuous curve" tool draws continuous, tangential arcs of any radius. Windows and doors can be multiplied, dragged, and stretched to fit selected openings. Copy/Paste and other Edit Menu operations work from and to multiple floors. In fact, Copy/Paste carries attributes such as layers, colors, and materials. New Edit commands include Split Wall, Fillet, or Offset Polygons and Polylines. Dimension figures retain their position when relocated.

You can now merge project files completely, or a floor at a time, while managing layers, materials attributes and other characteristics. And ArchiCAD's 3D Geometric Description Language (GDL) now works with 2D symbols; it can automatically reflect changes in the 3D object. You can view the coordinate system in the editing window for symbols.

Text handling is more sophisticated; there's a search and replace command for any text window—GDL, Bill of Materials, project notes, etc. Also, content of text windows is no longer limited to 32,000 characters.

The plotter changes bitmap and TrueType fonts to vector fonts, so you get the same size text on the output as displayed on the screen. PlotMaker documents can be hot-linked to the ArchiCAD floor plan, and updated automatically as you edit the plan. Fills can be handled as elements or as a whole by PlotMaker. In fact, hatching patterns can be associated to any textured material, such as brick or shingles, to realistically depict construction materials in perspective.

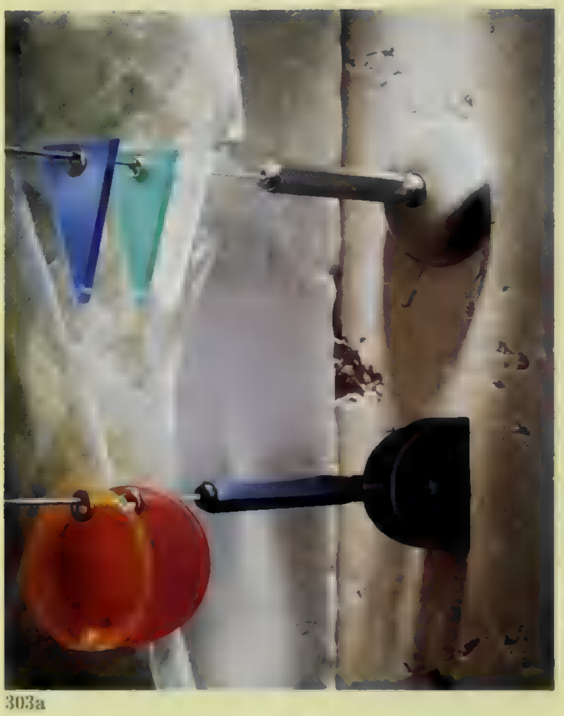
It is easier to create fly-throughs and perspective views with a camera tool" directly on the plan view. There's a new dialog for setting up axonometric views from any angle. And there's "vectorized" shadow-casting: the shadows are defined by polygons so their area can be accurately calculated in plan and elevation.

You can now define and locate any number of light sources in your project. Parallel, spot, and conical lights sources are available as 3D library items; you create or modify them like any other library symbol—and export them to many rendering packages, including ElectricImage, Atlantis Render, WaveFront, and RenderMan in their file formats. The DXF translator, already good, has apparently gotten better; it handles the DXF binary area.

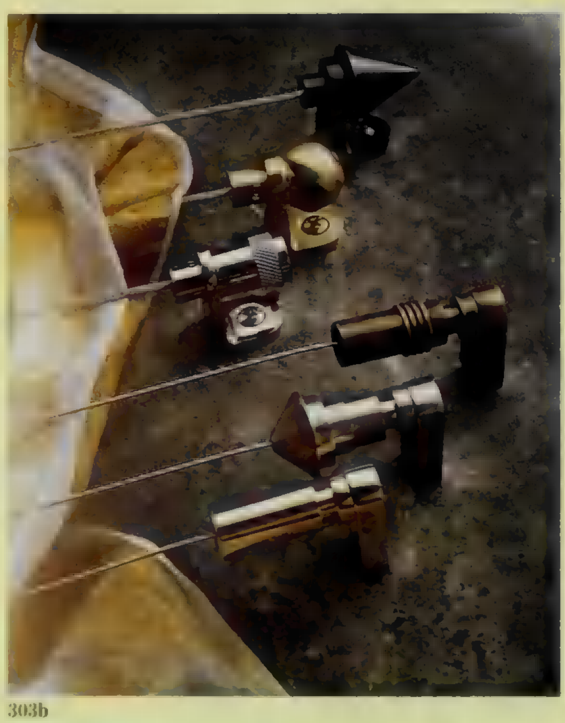
Manuals: Paperback reference, Getting Started, GDL guides, and a quick reference to the library symbols. Tutorials are architect-oriented. They do not fully show the ease with which you can rough-out 3D conceptual designs.
Ease-of-use: With this version, routine production drafting got a lot better—especially on a Power Mac. The modeling (you draw mainly in plan, and specify measurements in the third dimension; there are special tools for roofs, slabs, wall openings) and rendering/shading modules have always been a strong point.
Error-trapping: There's now a global undo instead of a story-based undo—the undo happens every place in a project file, no matter which window or building story the action was performed on. Drawing on an invisible layer now prompts a dialog box giving options to cancel, show the hidden layer, or choose another layer.
302 *on Reader Service Card*

For House or Apartment

© Reinhart Wolf photo



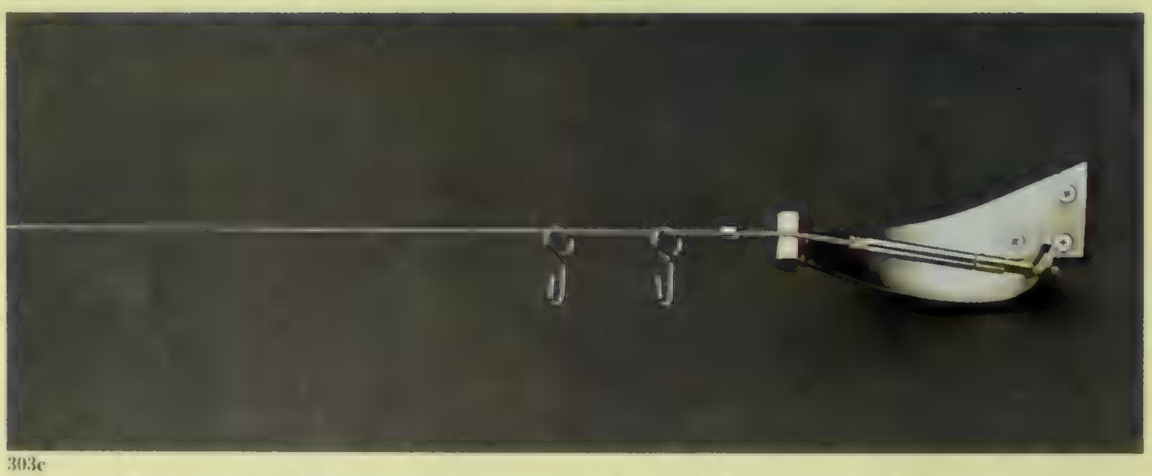
303a



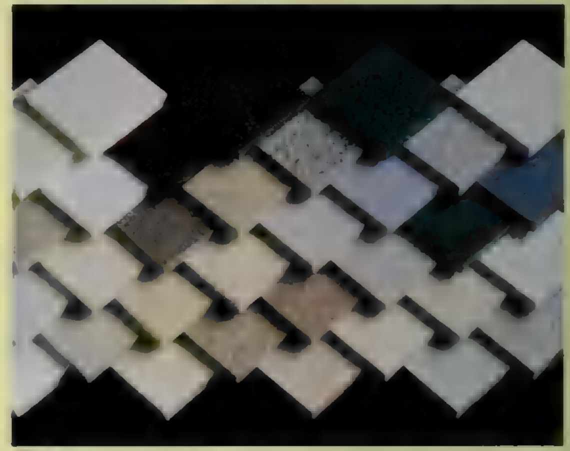
303b

304a

304b



303c



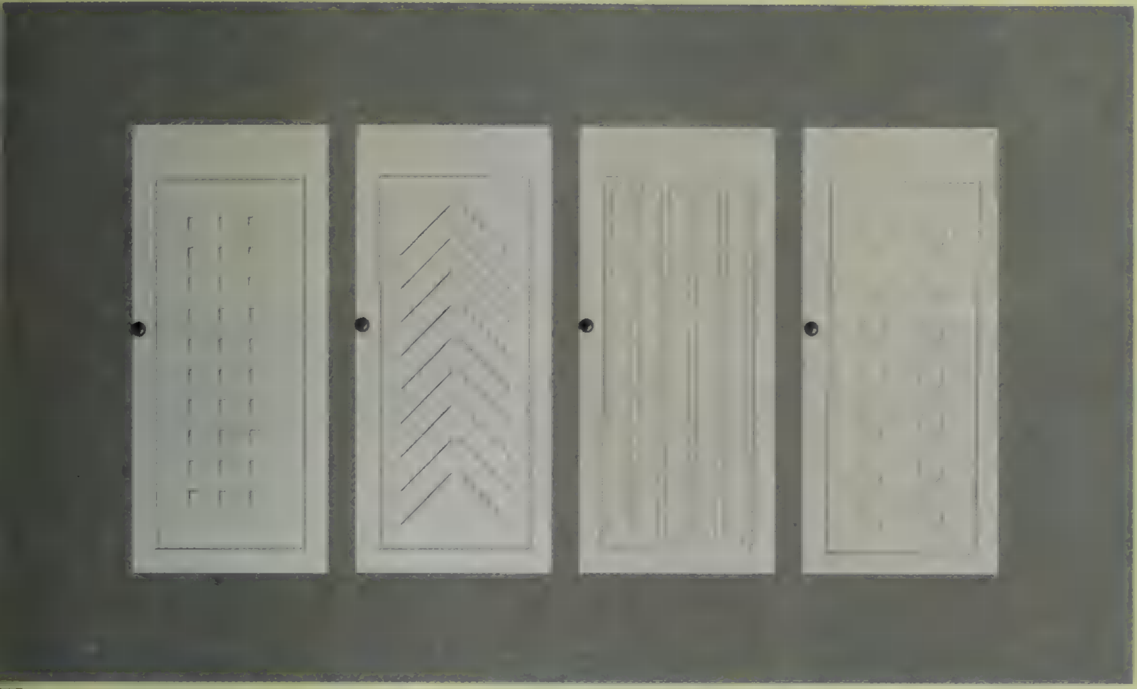
304c

303. Minimalist curtain rods
In Germany, the Blome Corporation makes decorative window hardware—curtain rods, brackets, traverse systems, and finials—with gemlike precision and great style. One of its sleeker, more architectural treatments uses stainless-steel cable as an alternative to a curtain rod. Blome's curtain wire, stretched between fittings mounted on wall or ceiling, is a versatile system with accessories, terminals, stops, and brackets that permit it to turn corners, span irregular spaces, even create a canopy-bed effect. The wire is tensioned by end brackets in styles from unobtrusive to [illegible], many designed by Danish architect Jorgen Kastholm (303b). The weight of the hangings—whether velvet draperies, sheers, or unlined fabric—determines the span of unsupported cable possible in a given installation. Fabric is suspended from clips with their own decorative flair, such as triangles or discs of colored glass (303a) or just plain nickel- or brass-plated clips (303c). Blome Corp., Secaucus, N.J.

304. Expanded solid-surface line
Gibraltar is a blend of polyester and acrylic resins in both solid colors and stone looks. Introduced in 1990, the line now includes sheet products in three thicknesses and 32 colors; prefabricated kitchen sinks and vanities; and accessories such as seaming kits, matching caulks, and trim strips. Sink bowls can contrast with countertops (304a) or match for a seamless look. A new 1/4-in. sheet thickness is suited to vertical uses such as tub surrounds (304b). Recently added colors extend the palette into deeper earth tones (304c). Wilsonart, Temple, Tex.

305. Custom look; off-the-shelf price
Simpson's new Advent doors take advantage of the weather-resistant and easy-to-tool characteristics of Medex medium-density fiberboard, a formaldehyde-free particleboard said to machine easily and to have a very smooth, paintable surface. The MDF panels, held in a stile-and-rail frame, are carved in Gothic, Art Deco, Southwestern, or other patterns by CAD/CAM-controlled routers. Four of the 15 standard designs are shown here; unique patterns may be specified. Doors, which must be painted, are suitable for interior as well as exterior use in residential applications. Fire tests are planned. Widths range from 2 ft 6 in. to 3 ft 6 in., and heights up to 8 ft. Simpson Door Co., McCleary, Wash.

A selection of new products for today's home, ranging from a very upscale disappearing refrigerator to a bullet-proof door. Additional residential designs appear in this month's Product Literature pages.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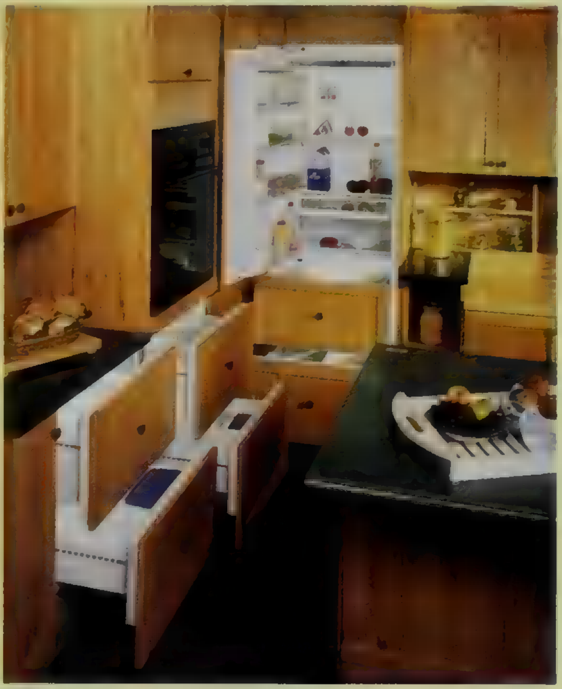
309a

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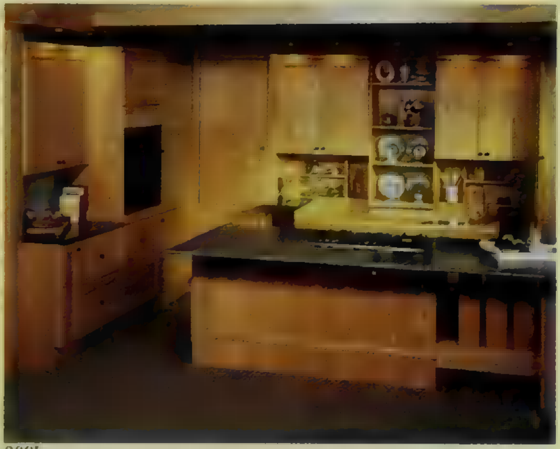
307

308


309b

306. Forced-entry-resistant
The rugged Impervia door is made in several constructions, including one said to show ittle or no damage after a direct hit with a sledge hammer, and a door capable of stopping a bullet from a .44 Magnum. Made with colored and textured high-strength Lexan polycarbonate faces, a two-panel MDF core, and laminated-wood stiles and rails, doors will not dent or rust as abused steel doors may, and can be machined and trimmed on site like a wood door. Frames accept a variety of closers, full-length hinges, and extra-long screws. Oakridge Industries, Beltsville, Md.

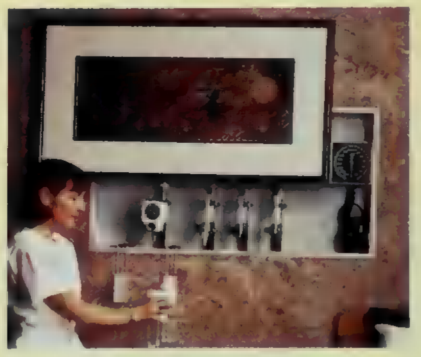
307. Three-hour fire door
Series 2000 doors have an insulating foamed-in-place polyurethane core that is said to bond securely to the steel face sheets, stiles, and rails for extra rigidity. Models are available with three-hour fire labels for 16-, 18-, and 20-gauge doors as per ASTM E 152 and UL-10B. Fenestra Corp., Erie, Pa.

308. Accessible steel-door systems
The pry-proof Adjusta-Fit insulated-steel door and frame, modified for ADA compliance, is now offered pre-assembled in wider widths and low-profile thresholds, and meets ANSI 117.1 section 4.13 accessible-hardware standards. Door and frame are powder-coated galvanized steel; the assembly has a 1 1/2-hr fire rating and can fit stud-wall or masonry openings from 3 1/8- to 12 1/8-in. thick. Benchmark, Bridgeton, Mo.

309. Icebox hide-and-seek
Sub-Zero has broken up the "big box" refrigerator into built-in-size modules: a system of cabinets and commercial-style drawers that lets refrigerators—and freezers—be located almost anywhere in a home. Called the 700 Series, units are designed to fit in the same footprint as standard kitchen cabinets: 27-in. wide by 24-in. deep. This simplifies planning: there's no oversized refrigerator to "work into" room layouts. The line consists of two basic configurations: an 80-in.-high unit with a cabinet and two drawers, and a base module, with two drawers, that fits under counters (309a). The tall model can be all-refrigerator, all-freezer (with optional icemaker), or include both cold-storage functions; the two-drawer unit can be either/or. Compressors are hidden under the bottom drawer, and panels and handles to match the rest of the cabinetry can be mounted on the fronts. Appliances virtually "disappear" when the doors are shut (309b). Sub-Zero Freezer Co., Inc., Madison, Wis.

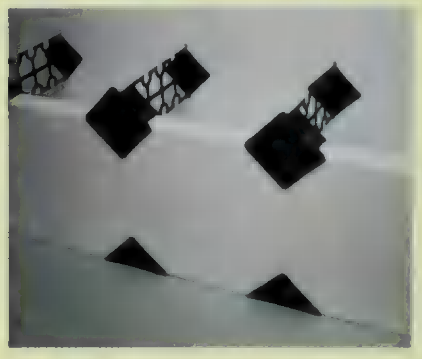
Product Briefs

For more information, circle item numbers on Reader Service Card.



310. Medical-gas service

The Gallery Wall is a UL-listed, single- or double-sided medical-gas delivery assembly which installs inside interior partition walls. Gas outlets, flowmeters, and other devices are concealed behind a decorative framed picture (client supplied) mounted on a counterweighted steel frame. Ball-bearing slides permit quick access when the equipment is needed. Ohmeda Inc., Norcross, Ga.

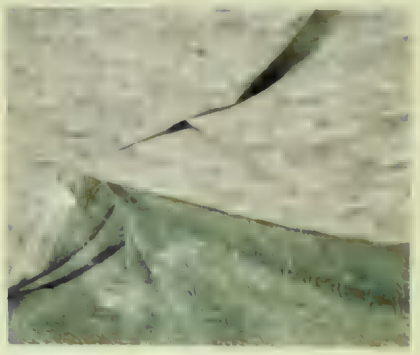


311. Insulated concrete forms

A new leave-in-place system, the Diamond Snap-Form uses 2-in.-thick rigid EPS boards connected by lattice-and-bearing plate ties every 12 inches in both directions to create an 8-in.-wide cavity for poured concrete. Boards come pre-slotted for the ties and corners are pre-formed. Ties are configured to hold and position rebar; plate ends accept screws. AFM Corp., Excelsior, Minn.

312. All lined up

A special series of unglazed porcelain mosaic tile has been sized and colored to coordinate with 4 1/4-in. scored-pattern glazed wall tile so that mosaic designs can be continued from walls to floors with the grout joints aligned. Back-mounting sheets assist correct installation. Unglazed tiles may be used indoors and out, on walls, floors, countertops, and pools. Dal-Tile Corp., Dallas.

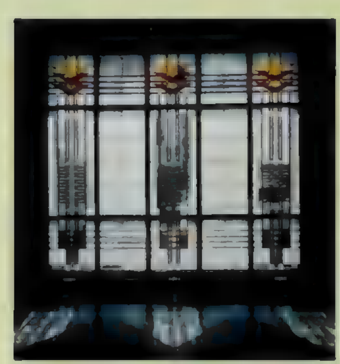


313. Jacquard upholstery

Serpentine (bottom) and Prairie-motif Archive are two of eight jacquard-pattern polyolefin weaves treated with Teflon stain repellent. Available in a total of 83 colors, the Class A fabrics are suitable for auditorium, health-care, and hospitality use. Additional flame-resist treatments let fabrics meet Boston and NY Port Authority standards. Douglass Industries, Egg Harbor, N.J.

314. Library furnishings

New reading tables are made with a laminate work surface; solid-lumber-core tops; and natural-oak edges, skirting, and legs to match existing Legacy shelving, carrels, and circulation desks. Tables in the shapes shown comes in a range of standard and custom sizes and heights for juvenile, youth, adult, and ADA compliance (25-in. to 32-in.). Bretford Manufacturing, Schiller Park, Ill.

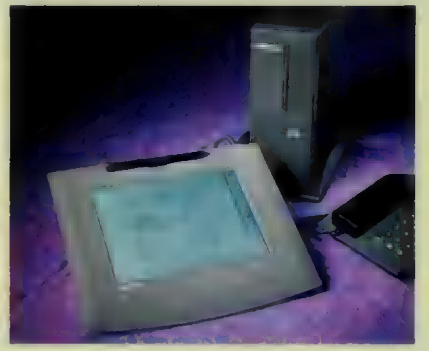


315. Art-in-Architecture source

Architectural-glass artist Arthur Stern incorporated the Art Deco geometries and column details of an adjacent historic structure into leaded-glass windows installed in Baton Rouge, La.'s new R.B. Long Federal Courthouse. Although large (17- by 13-ft) and unified by their vertical elements, each section of colored and beveled glass is unique. Arthur Stern Studios, Benicia, Calif.

316. Graceful under abuse

Furniture designer Brian Kane used solid-metal rods for the arms and back of his Hyde Park benches, and set them on tubular-steel legs to withstand heavy use. The slatted seat may also be specified in metal rod for the most exposed sites, or in redwood, jarrah, oak, or maple for a corporate or resort environment. Landscape Forms, Inc., Kalamazoo, Mich.



317. Desktop document sharing

OmniShare allows designers in two locations to jointly view CAD or other drawings, discuss them, and mark them up with an electronic pen during a phone call. Combining the functions of both phone and fax, and priced in the $2,500 range, the tablet plugs into a standard analog phone line. Up to 500 pages can be stored and manipulated. Hewlett-Packard Co., Palo Alto, Calif.

Short takes

GE to private-label light bulbs. The Justice Department has tentatively okayed General Electric's request to terminate a consent degree in force since 1911, following antitrust findings in the manufacturing of light bulbs before the first World War. *The Wall Street Journal* reports that ending the decree will allow GE to sell private brand and generic bulbs to compete with lower-priced imports.

Stretching. Carlisle SynTec Systems has bought the coatings and waterproofing business of Quaker Construction Products, Inc. Based in Oklahoma, the new division will make and market Carlisle's existing waterproofing products as well as rubberized asphalt membranes, elastomeric fluid coatings, and sealants for a range of building applications.

Lead-be-gone. NSF International (formerly National Sanitary Foundation) has published Sec. 9 of ANSI Standard 61, a new criteria on how much lead and other contaminants can be added to drinking water by "end-point devices" such as faucets, drinking fountains, and refrigerator ice makers containing brass materials.

Must read. "*How Superstore Sprawl Can Harm Communities—and What Citizens Can Do About It*" costs $16 from the National Trust for Historic Preservation, 202/673-4255.

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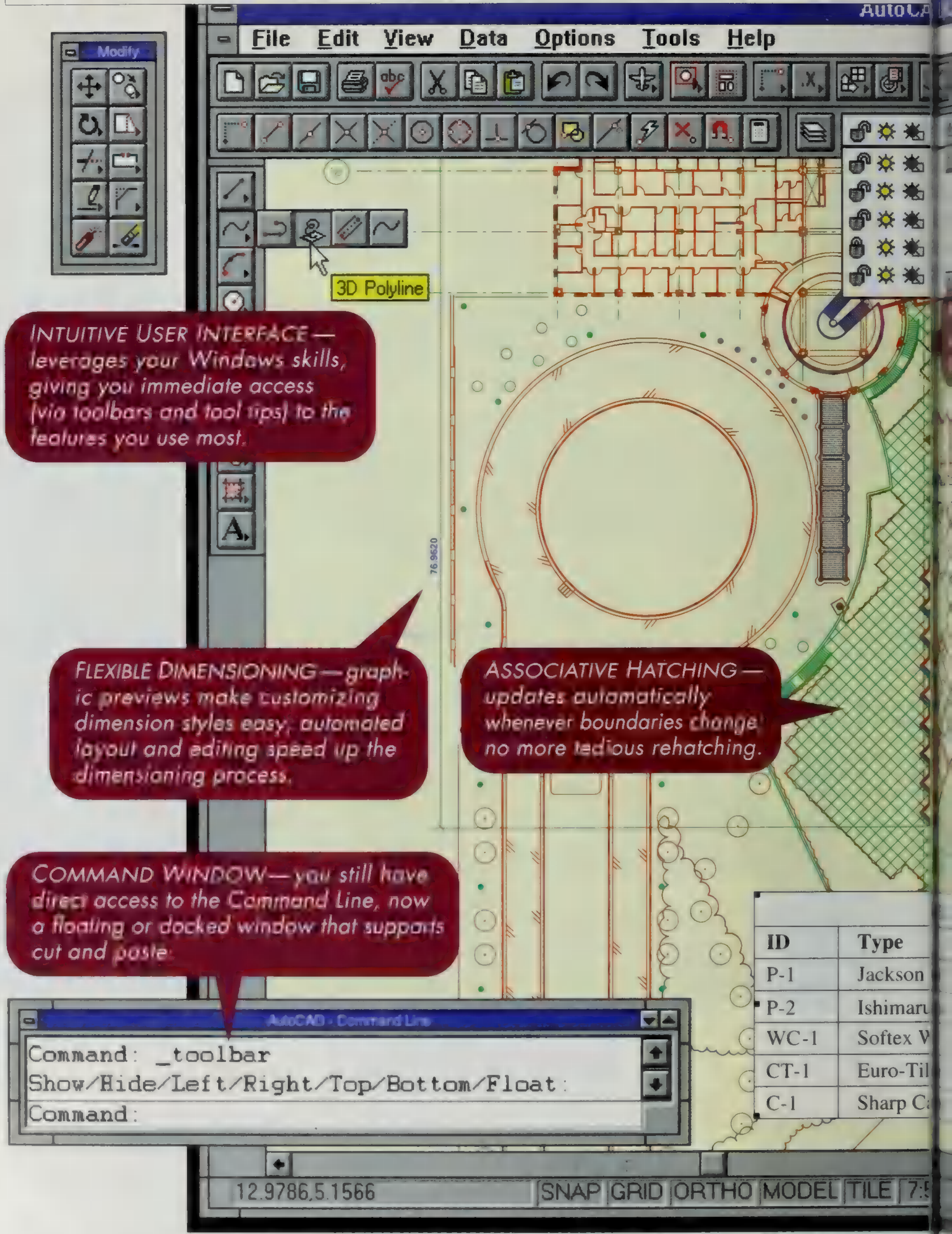
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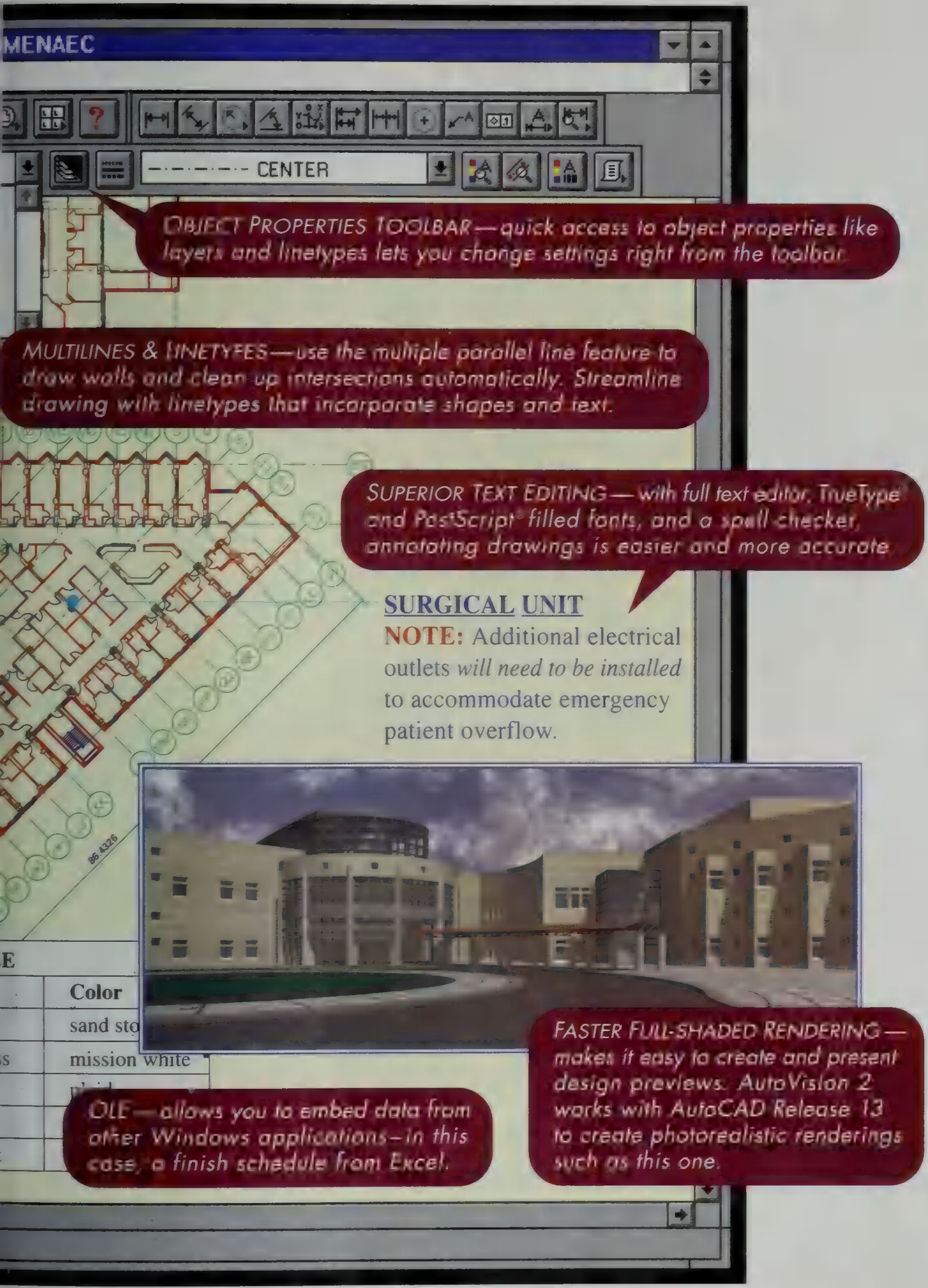

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landscape design created by Dowl Engineers for Anderson DeBartolo Pan (ADP). 3D extrusions and AutoVision rendering created by Autodesk Marketing Support.

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"Computer technology is changing too fast."
"I need to get work that pays."

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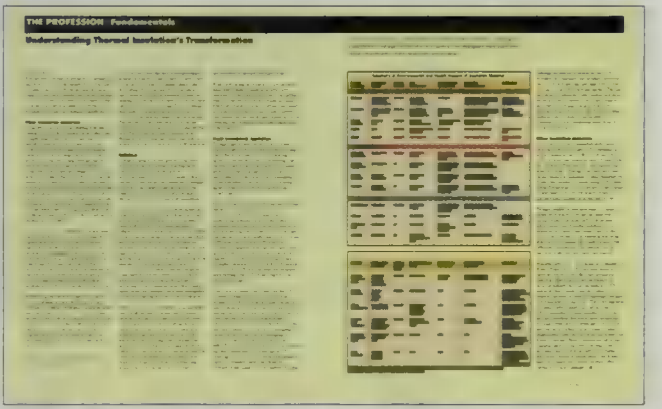
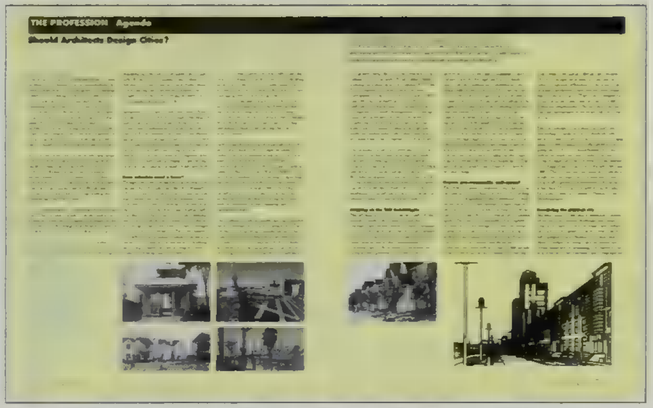
THE PROFESSION focuses on technology in new ways: we're still first to cover fast-moving controversies: wood quality, regulations, building failures. And we'll be first to inform you of emerging technologies—as we have been with subjects like natural ventilation and the technology-driven workplace. We've also added **Fundamentals**, hard-to-find guidance to commonly used technologies, referencing essential sources and covering evolving products.



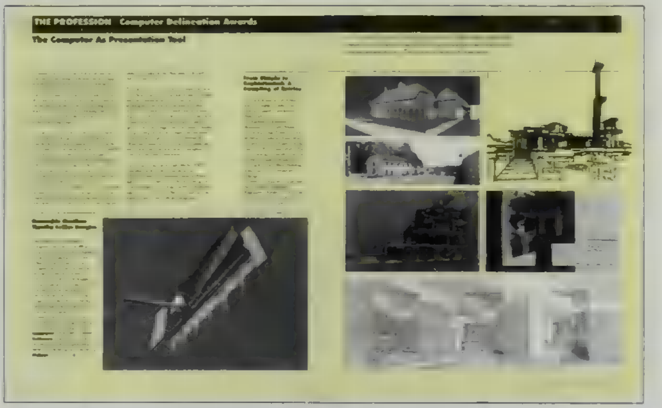
Tables offer speedy product comparisons.

Where the work is . . .
Only THE PROFESSION tracks regional markets and hot building types. Breaking into markets where the architect's expertise can make a contribution—but doesn't now—is the subject of the **Agenda** series. We've taken on industrial heritage corridors, disaster mitigation, and "green" architecture, to name a few. Neither P/A nor Architecture points out such new ways to use expertise *architects already have.*



Agenda focuses on market barriers and opportunities.

The computer revolution in practice . . .
Our popular **Computer Delineation Award** is only one way THE PROFESSION shows how computers are changing the way architects work. (This year's entry deadline is March!) Look for even more on managing computers in the office. And RECORD remains the only professional journal that reviews software.



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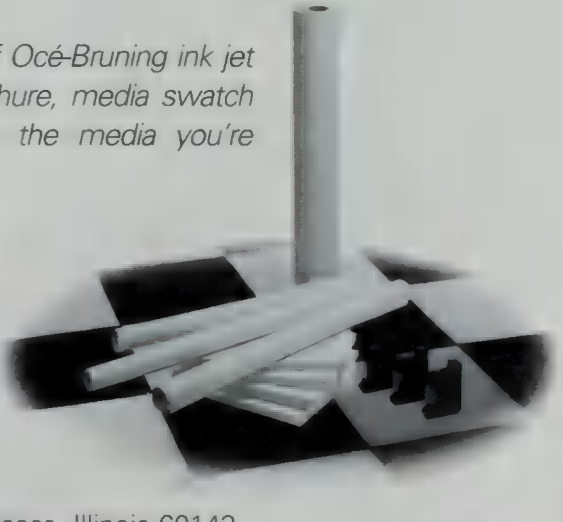

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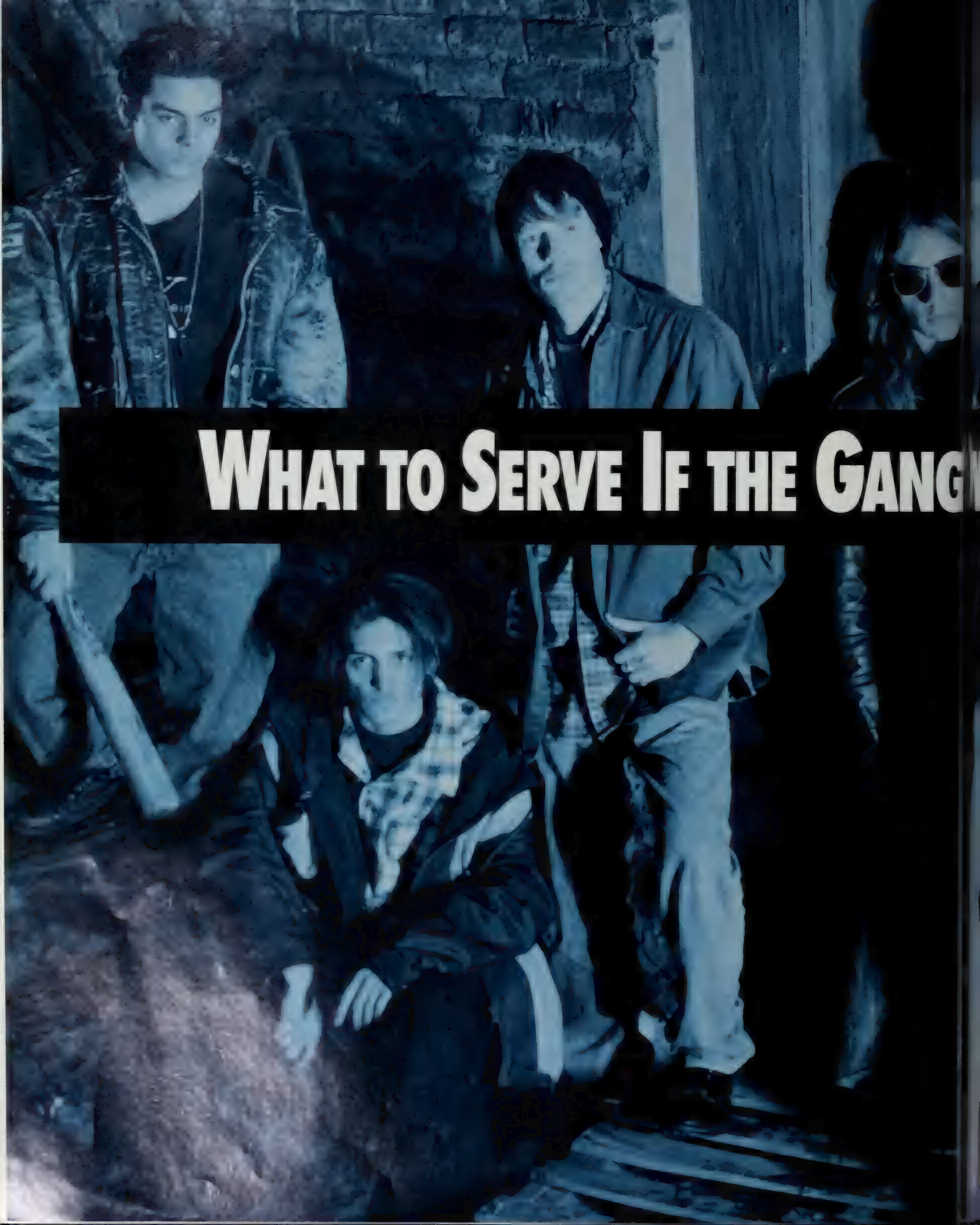
WHAT TO SERVE IF THE GANG



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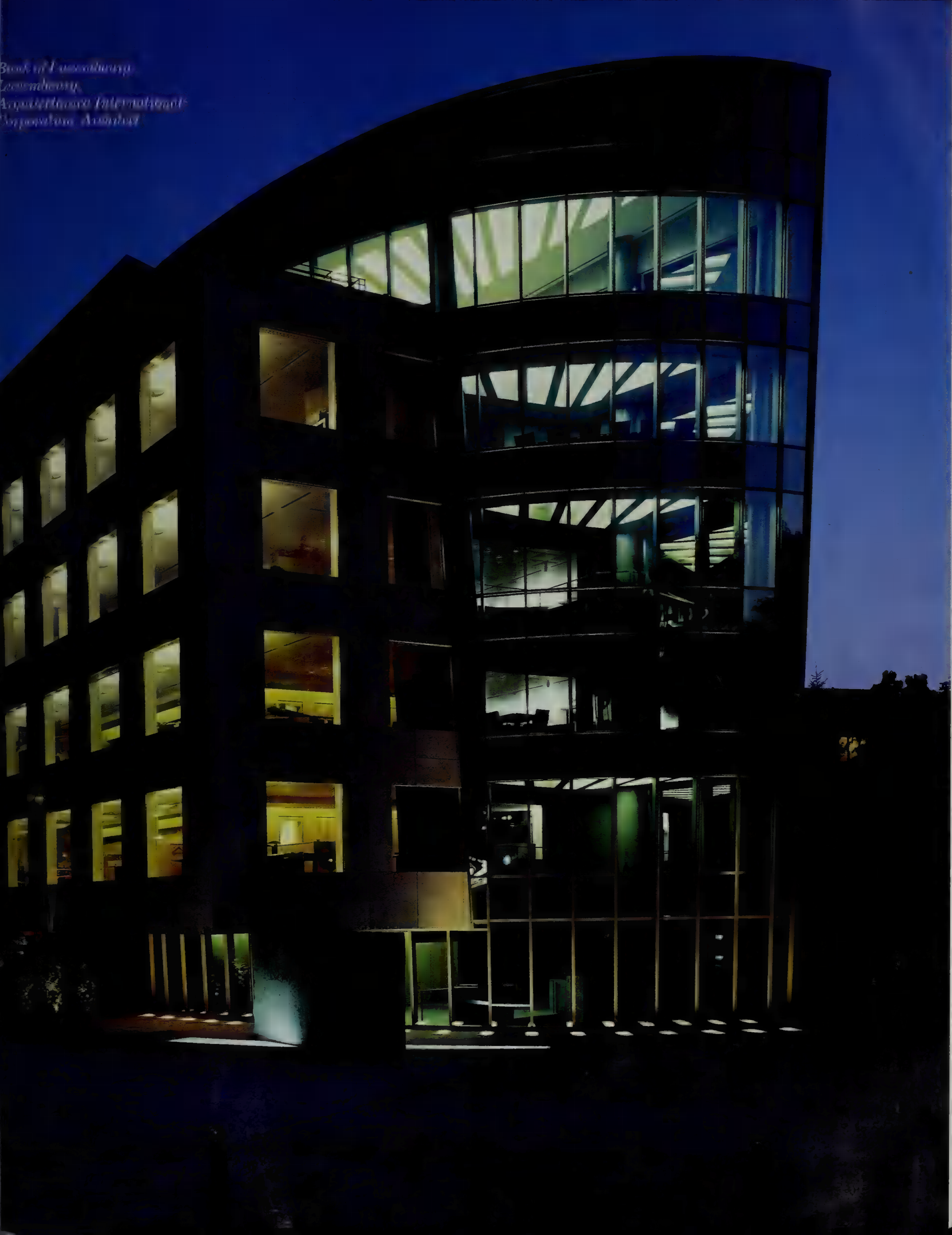
Circle 17 on inquiry card

While in no way educational buildings, all the examples in this month's feature section have a lesson to teach. "The gallery tells one what it is, how it was made, and what the act of making something means," writes RECORD correspondent Aaron Betsky of the Canadian Clay and Glass Gallery by Patkau Architects (page 64). John Patkau calls it a "didactic building." The same is true for Arquitectonica's Bank of Luxembourg (page 56), whose message is to "project and confirm the bank's values," according to principal-in-charge Bernardo Fort-Brescia. This month's Building Types Study, 722/Multifamily Housing, offers an enlightening look at how the future of housing is, in its diversity, looking increasingly like America itself (page 84). Carlos Jimenez's design of the Central Administration and Junior School Building at the Houston Museum of Fine Arts (page 70), the newest addition to the city's so-called arts district, is an instructive example of pedestrian-scale development. Richard Rauh's O'Neil Cinemas in Duluth, Georgia, (page 78) an artful conglomeration of corrugated metal set amid a confusing swirl of highway exit ramps and suburban shopping malls, shows us that, as its architect maintains, movie theaters are one of the few settings where people expect (or tolerate) the unusual. *Karen D. Stein*

Manufacturers' Sources listed on page 103

Gaining Currency

Arquitectonica's new bank headquarters gives a bold identity to an institution that prizes the anonymity of its clients.



Bank of Luxembourg,
Luxembourg,
Arquitectonica International
Corporation, Architect

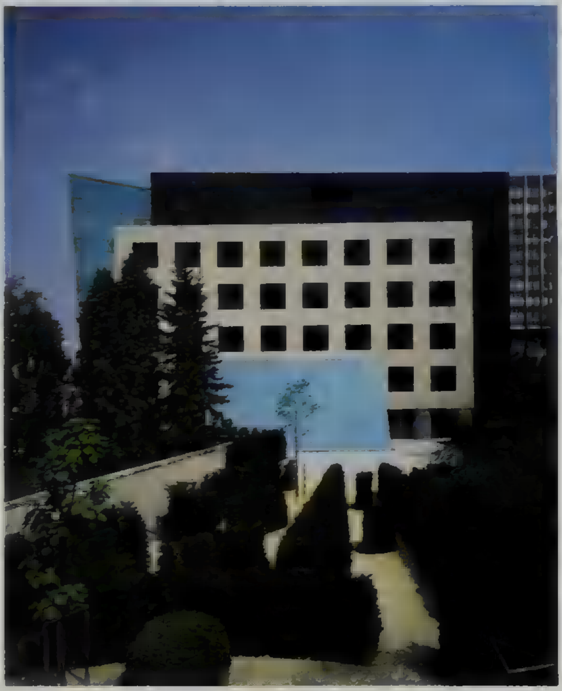
the map, Luxembourg looks like a leftover of either Belgium, ermany, or France. Landlocked, the 998-square-mile state is smaller han our smallest, Rhode Island, but its proximity to centers of Euroean wealth and its Swiss-like secrecy laws regarding banking have ade the Grand Duchy's capital one of the world's fastest-growing nancial-service centers. Along the road from the airport to a modest, ostly post-World War II town center is a mushrooming series of shopping centers" anchored by signature outposts of some of urope's biggest banks: Richard Meier's Hypobank and Gottfried öhm's Deutsche Bank. The 70-year-old Bank of Luxembourg chose different tactic and purchased the most prominent site downtown, where the main street, Boulevard Royal, makes a 90 degree turn.

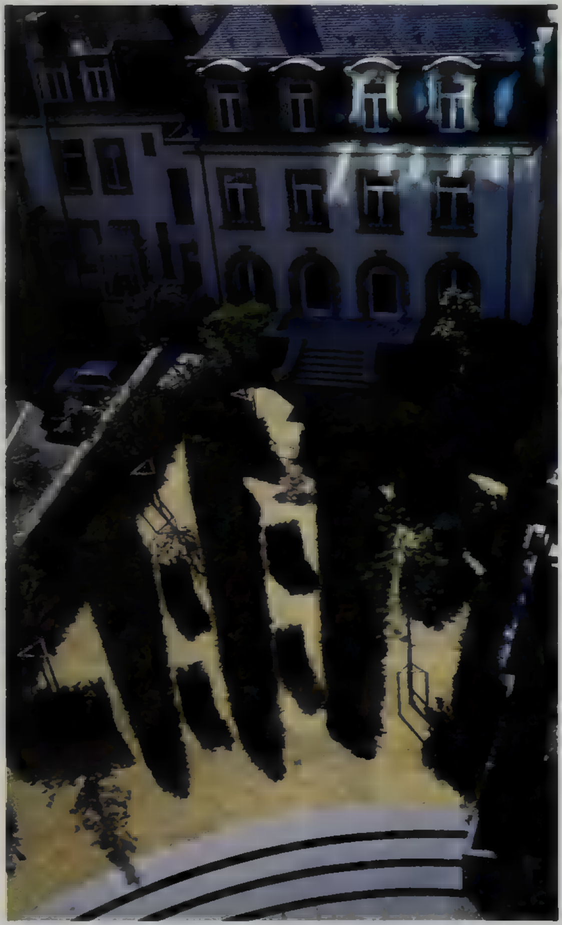
o distinguish his institution from its some 230 competitors in the rea, Bank of Luxembourg's Managing Director Robert Reckinger hose to give architecture "the role of ambassador carrying our public mage...the role of a marketing tool." Having admired Arquitectonia's Banco de Credito in Lima, Peru [RECORD, February 1989, pages 0-99], he enlisted the Miami-based firm to "project and confirm the bank's values." Unlike the Banco de Credito, which projected exubernt self-confidence in the face of vast political and economic nstability, the Bank of Luxembourg seeks to strike a balance between tradition and innovation.

Principal-in-charge Bernardo Fort-Brescia translated that charge lmost literally, breaking the building into stable and dynamic shapes oined by a thick spine of services. "We needed to express that, in pite of the bank's long history, it is a progressive institution," says 'ort-Brescia. A cantilevered stone box clad in local Chassagne stone ligns with the boulevard, and is punctured by almost flush square windows of amber-colored glass. A pie-wedge-shaped tower of tinted reen glass echoes the curve of the street. Connecting the two olumes is a parallelogram of polished black granite, which resolves igid setback requirements with the conflicting geometries of the lock-deep site. Driving home the image of managed risk is an enornous boulder of raw granite from Normandy—a prehistoric megalith lid beneath the cantilever to mark the main entrance.

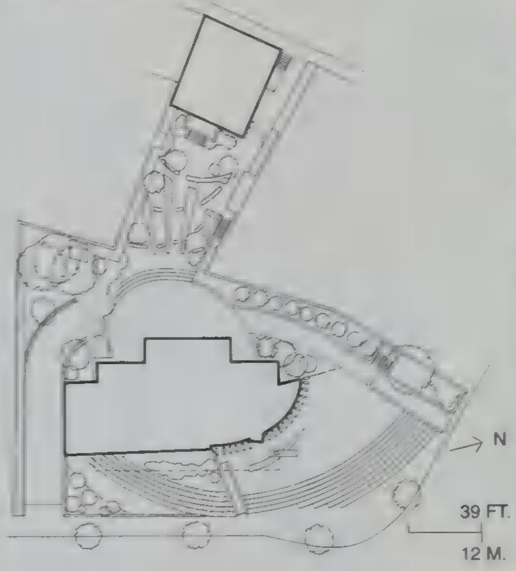
To accommodate the program while adhering to the permitted exterir envelope, seven stories of the reinforced-concrete structure are nderground, including four levels of parking. Behind the main buildng, Arquitectonica replicated a nearby stone villa to complete the arden perimeter (bottom left). Landscape architect Jacques Wirtz used clumps of evergreens to repeat the radiating lines and curves of he main building. Throughout the interior, too, the contrast of what 'ort-Brescia calls "stable" rectilinear forms and "plastic" curves is epeated, giving an overall image that is respectfully solid, but not verly staid. *Karen D. Stein*

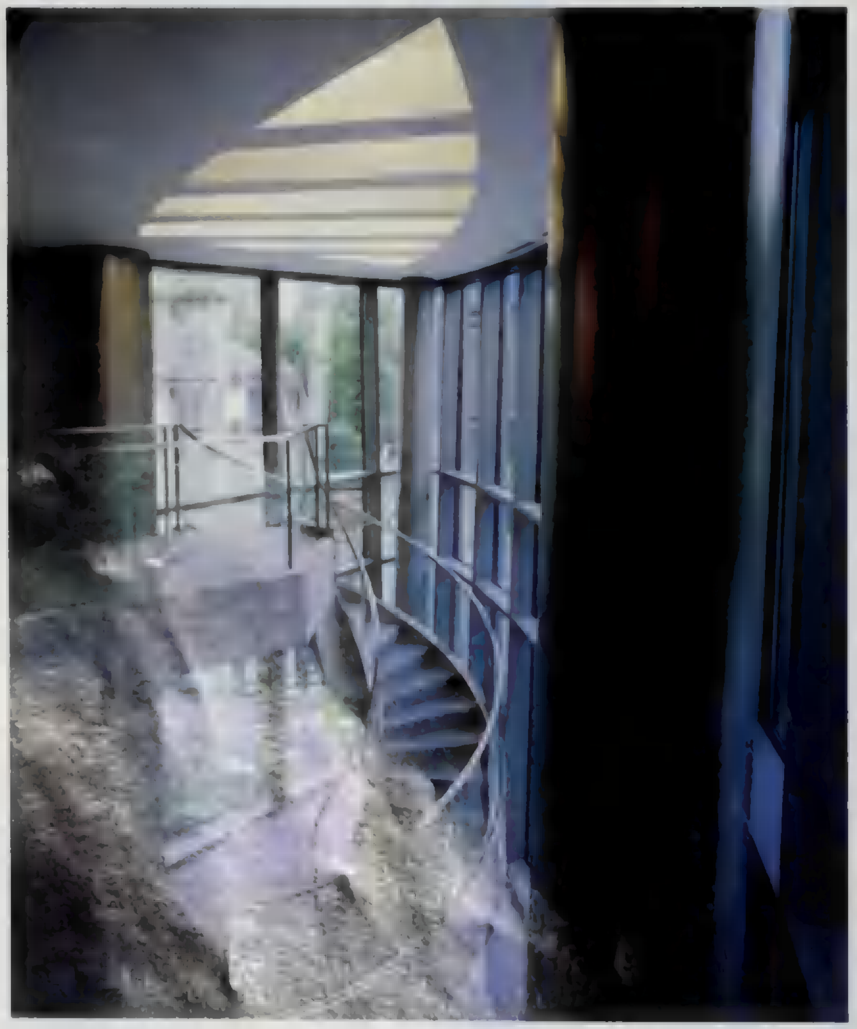
©Richard Bryant/Arcaid photos





The Bank of Luxembourg occupies a prominent site along the city's main street. A curved glass tower acts as a pivot where Boulevard Royal turns from east-west to north-south (plan left). A garden designed by Jacques Wirtz connects the main building with Neo-Classical "twin" pavilions for dining/conference; the north pavilion is in fact an Arquitectonica-designed replica meant to complete the composition.

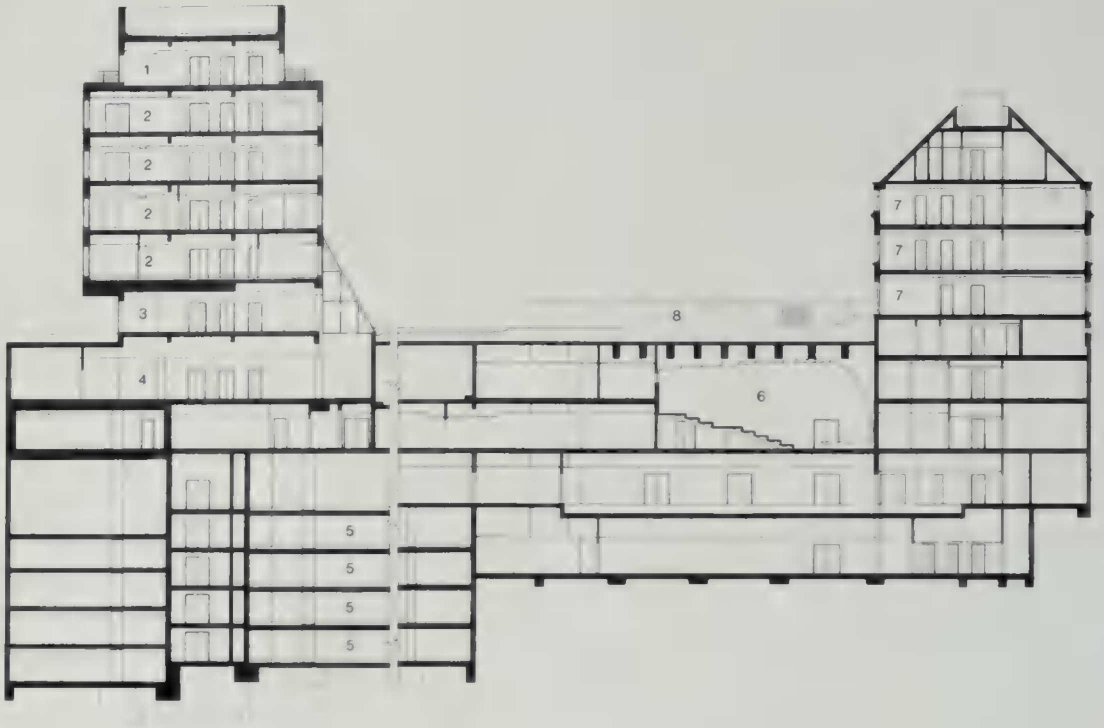




Up Close

Openness versus privacy. Establishing straightforward circulation routes in an institution that prides itself on the secrecy it provides its clientele is particularly difficult. Those unconcerned about being recognized use the main entrance on Boulevard Royal and descend to the central banking hall on an open hydraulic lift (top left) or via the more frequently used grand staircase that leads directly to the lounge (opposite). Lower-profile clients park in the underground lot and can ascend by elevator directly to the vault and private consultation rooms. Bank of Luxembourg confidentiality regulations also require that all desks be cleared at the end of the day so that nighttime cleaning crews are unable to glean any information about bank clients, even inadvertently. More public reception and dining areas are located in the villa at the back of the site, which is connected to the main building by an underground hall.

Inside the green-glass tower is a polished steel staircase that connects the reception area with trading floors above (bottom left). Another curved stair (opposite) and a small hydraulic lift that is more for visual effect than use (top left) join reception to the partially subterranean main banking hall. Here a waiting area is lit from above by a glass wall overlooking the garden. Banking counters line the north wall and offices for private consultation with bank officers are tucked beneath the front facade, separated by a block of elevators that allow officers to descend from their second-, third-, or fourth-floor offices without passing through the reception area. Curtain-wall mullions incorporate hot- and cold-water pipes to maintain a seamless effect.



1. Board room
2. Offices
3. Entrance
4. Private banking
5. Parking
6. Auditorium
7. Reception/dining
8. Garden

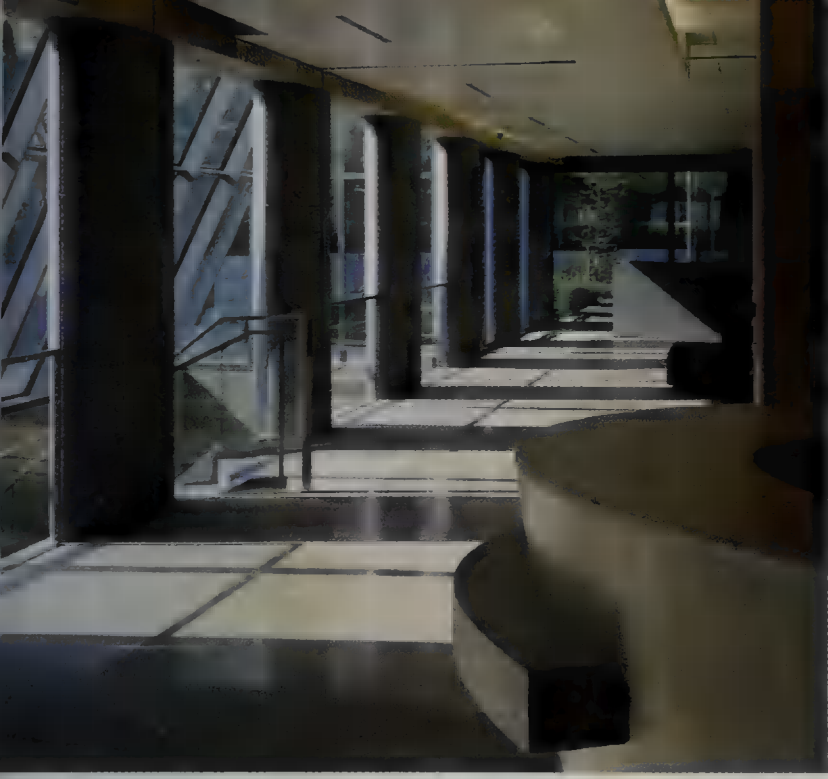
In dealing with the dual [illegible] the block-deep site—spanning a central traffic artery lined with mostly six-story [illegible] buildings and a [illegible] of stone [illegible]—Arquitectonica opted for two buildings. A showpiece along central Boulevard Royal and a replica of a [illegible] mansion. These are linked underground (section above). Inside the villa, which Fort-Brescia jokingly calls the firm's "first historicist design," are dining and reception rooms (photos above).

Lighting designer Georges Berne of Paris-based L'Observatoire 1 repeats the themes established by Arquitectonica's design. Exterior illumination highlights the uniqueness of each of the three main volumes (previous pages), and interior lighting combines incandescent and fluorescent fixtures to make bands of diffused light that echo the geometry of each room.

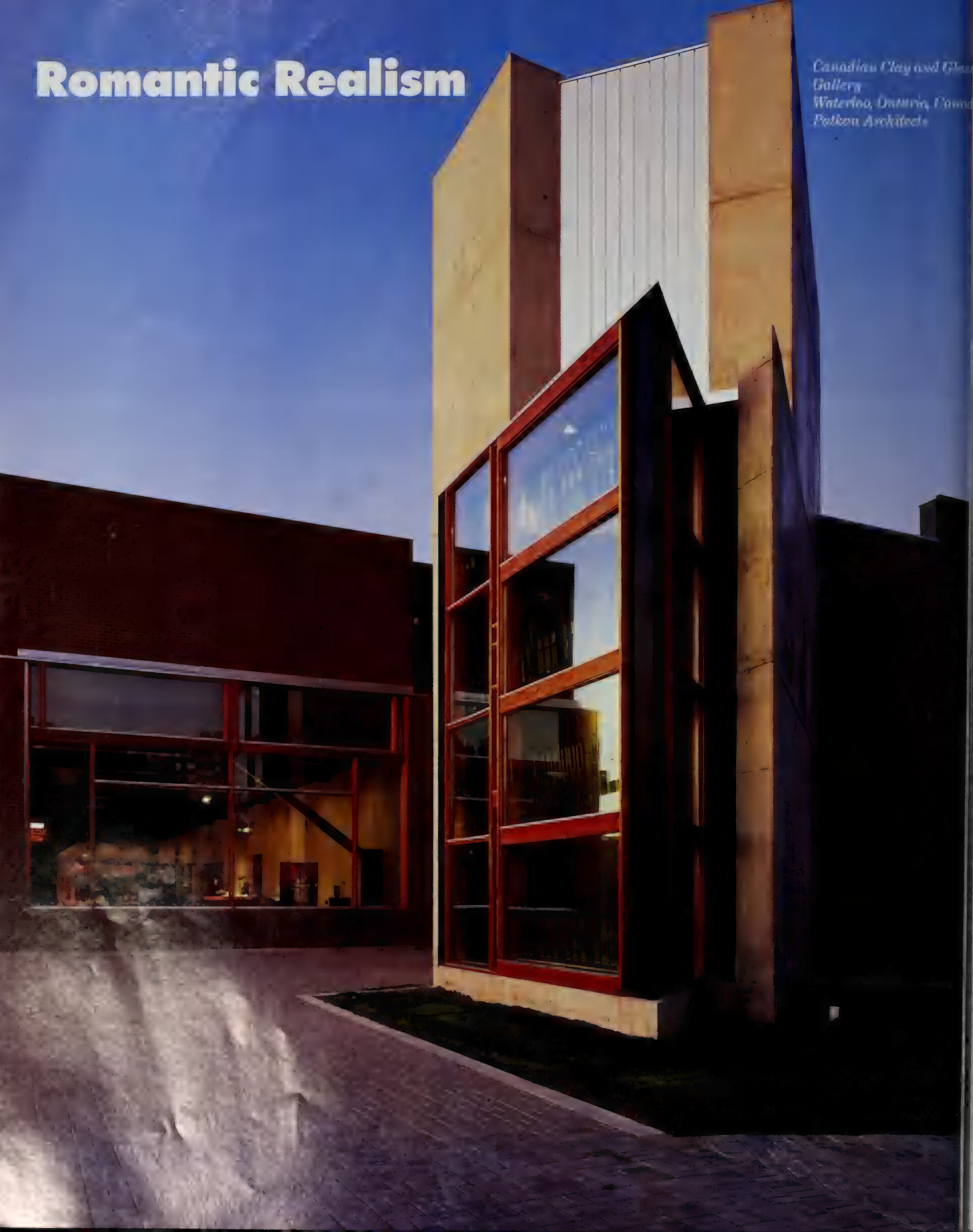
A conference table designed by Arquitectonica (opposite top right) and desks and book stands by Jean-Michel Wilmotte (opposite middle) are complemented by custom maple cabinetry. Maple panels also line auditorium walls (opposite bottom right).

Four levels of underground parking are located beneath private consultation offices and the vault (section above left), which contains deposit boxes, allowing clients who require anonymity to conduct their business out of sight. In fact, there are no security cameras to record who comes and goes.

Credits
Bank of Luxembourg
Luxembourg
Architect: *Arquitectonica International Corporation—Bernardo Fort-Brescia, principal-in-charge; Andy Gruber project manager; Eduardo Luaces, project architect; Tom Bittner, Amauri Chacon, project team*
Associate Architect: *Bureau Cavallini*
Engineers: *Groupe Ingenierie Alsace; Schroeder & Associes*
Consultants: *Wirtz International (landscape); Jean-Michel Wilmotte (interiors); L'Observatoire 1 (lighting)*
General Contractor: *Compagnie de Constructions*

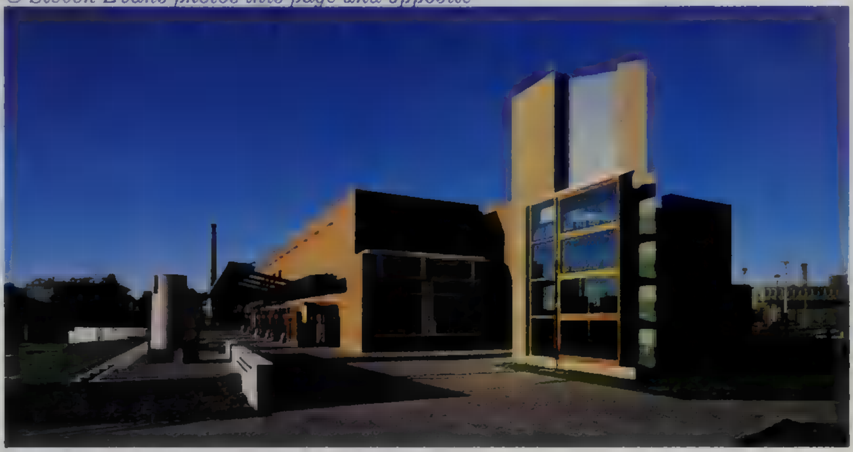


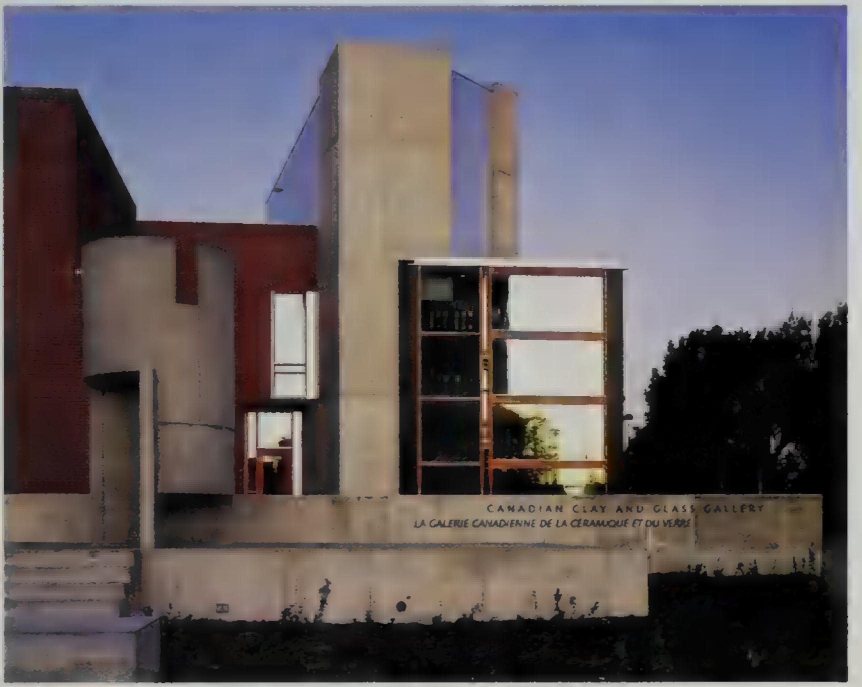
Romantic Realism



Canadian Clay and Glas
Gallery
Waterloo, Ontario, Canad
Patkau Architects

© Steven Evans photos this page and opposite




CANADIAN CLAY AND GLASS GALLERY
LA GALERIE CANADIENNE DE LA CÉRAMIQUE ET DU VERRE

Located at the edge of Waterloo, Ontario on Silverlake, an artificial pond, the Gallery faces the city with a beacon-like, 38-foot-high tower through which one can see some of the collection. The entrance, aligned with the Seagram Museum across the street, is underneath a long canopy that will eventually offer a glazed introduction both to glass and the building's structure.

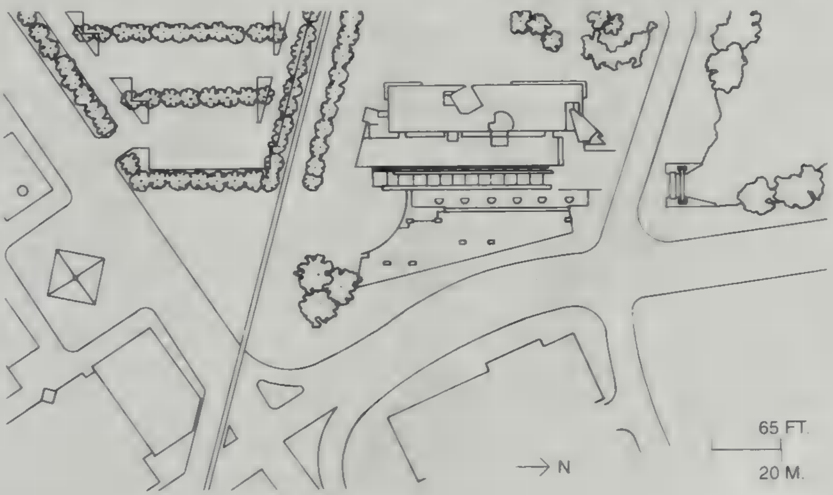
he craft of composing complex materials is the key to the construction of the Canadian Clay and Glass Gallery in Waterloo, Ontario. Designed by the Vancouver firm of Patkau Architects, this 18,600-square-foot sliver of concrete block, steel, and glass illustrates what it houses: the ability to transform raw materials such as sand and ore into works of art by taking them apart and recombining them into new forms. Just as concrete block is made out of cement and aggregates, and steel beams are forged out of iron, the glass displayed in the gallery is fired silica, and the ceramic pots are rough clay turned into smooth symmetrical forms. Strong instead of subtle, the gallery tells one what it is, how it was made, and what the act of making something means. "This is a didactic building," affirms John Patkau.

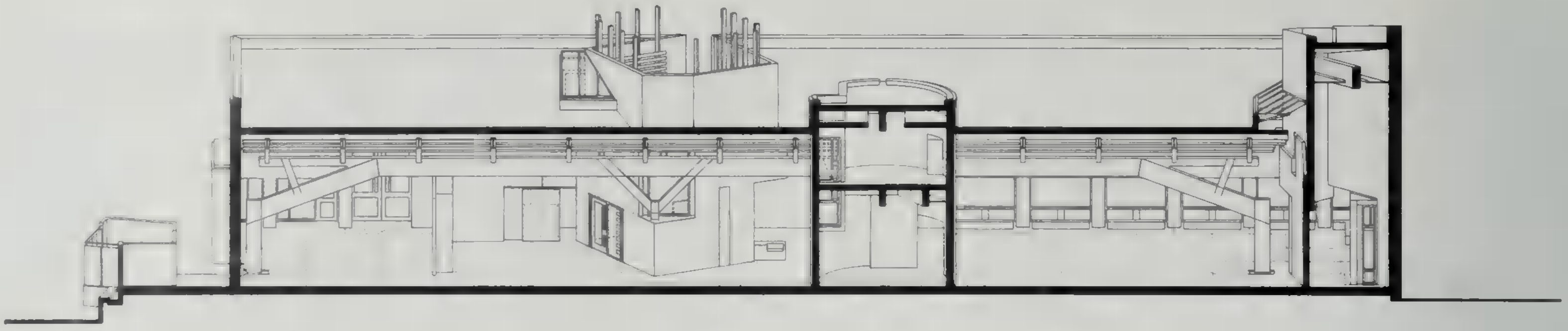
Patkau's firm, which has gained an international reputation for its expressive wood constructions in western Canada, originally won the competition to design the facility in 1986. At that point, the museum was to be a much larger structure with urban ambitions designed to house a complex of galleries, lecture spaces, and an actual glass-blowing studio. The gallery was to be the cornerstone of the development of this industrial area at the edge of town into a new civic center that would include Waterloo's city hall. Together with Barton Myers' Seagram Museum across the street [RECORD, April 1985, pages 138-145] and the existing distillery buildings behind that Postmodern masterpiece, it would form a park where industry, urbanity, and nature could mix in what Patkau has called an "alchemical process" that would reveal their common forms.

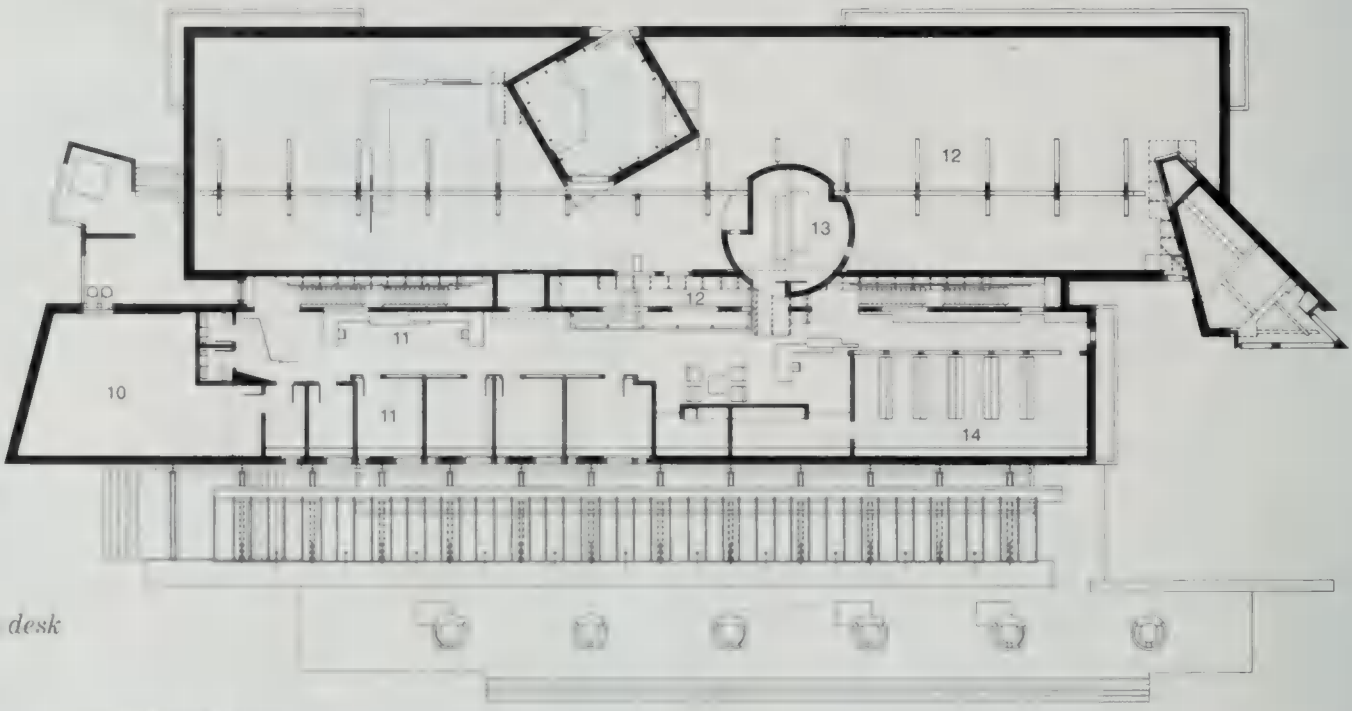
But the gallery was never able to raise the necessary funds, the distillery burned down, and the city hall was put on hold. The city did help the Gallery complete a building, but it is only a third of its original planned size. Gone are the aedicula-like elements originally positioned at the crossing of two axes. Instead, Patkau employed the layers of parallel spaces that mark much of the firm's current work, articulated by structural members and simple planes that are as complex as they are muscular. The building is "an imposing monument, much larger in scale than it is in terms of floor area," according to gallery director Suzanne Greening.

What Patricia and John Patkau have achieved is a condensation of both the program and of the industrial vernacular that shapes the context and subject of the building. The Gallery abstracts the metal and steel sheds of its neighborhood, and makes good use of the strong craft-orientation of Ontario. Influenced by the heavy industry that is still the economic lifeblood of the area, and carried on by generations of immigrant craftspeople, John Patkau describes the building as a "high-quality construction in metal and concrete, unlike anything you would find in the timber-based world we are used to." Patkau believes such a high level of craft in the use of strong materials offers "a resistance" to the ephemeral forms of a consumer-oriented society.

It also "emphasizes our original focus on the production of material" by showing the ways in which a building can reveal how it was made. Just as the spaces of the gallery are layered so the columns and walls are stratified accumulations of finished surfaces, supporting structure, and scrims. "Thus," says Patkau, "the composite nature of the building's construction starts to be comprehensible." "Those who walk in there to learn about glass and ceramics walk in and understand what the building is all about. They see the inherent connection between materials that started out in a different form and are now something else," says Greening. Her faith in the romantic realism of the gallery is a validation of the Patkaus' stark poetry. *Aaron Betsky*

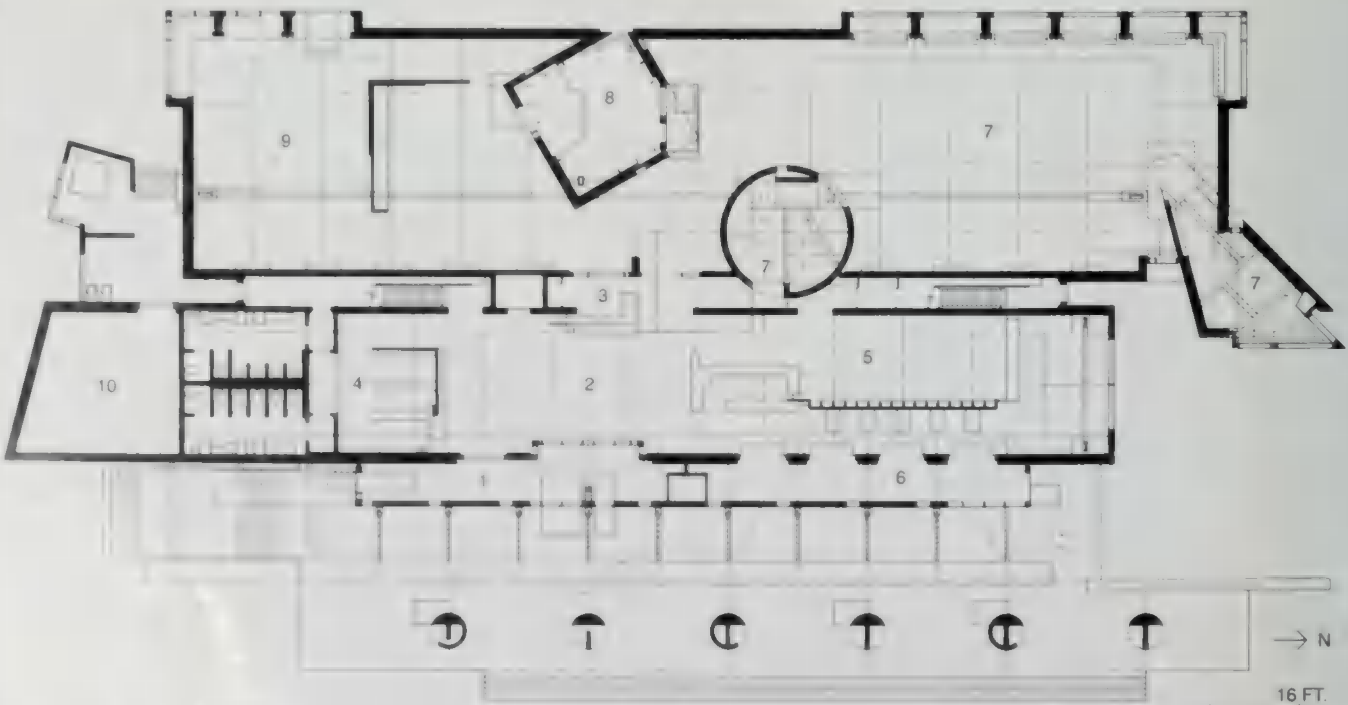




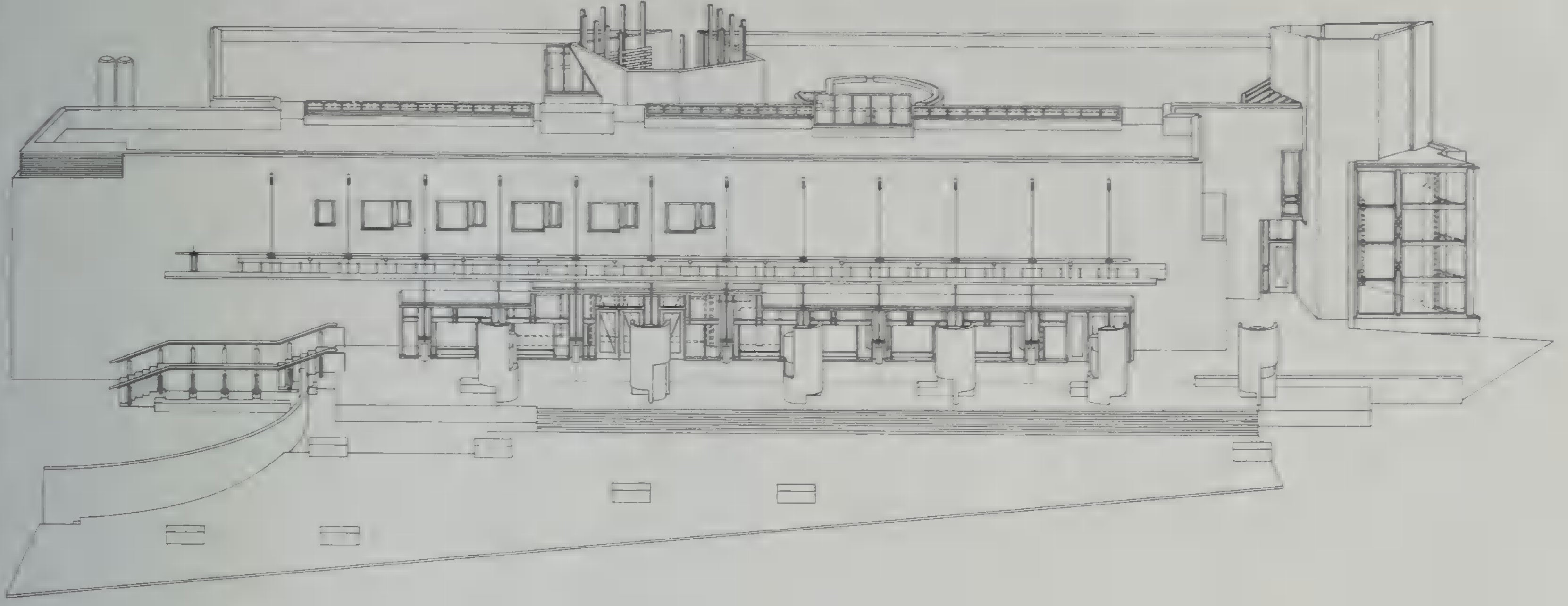


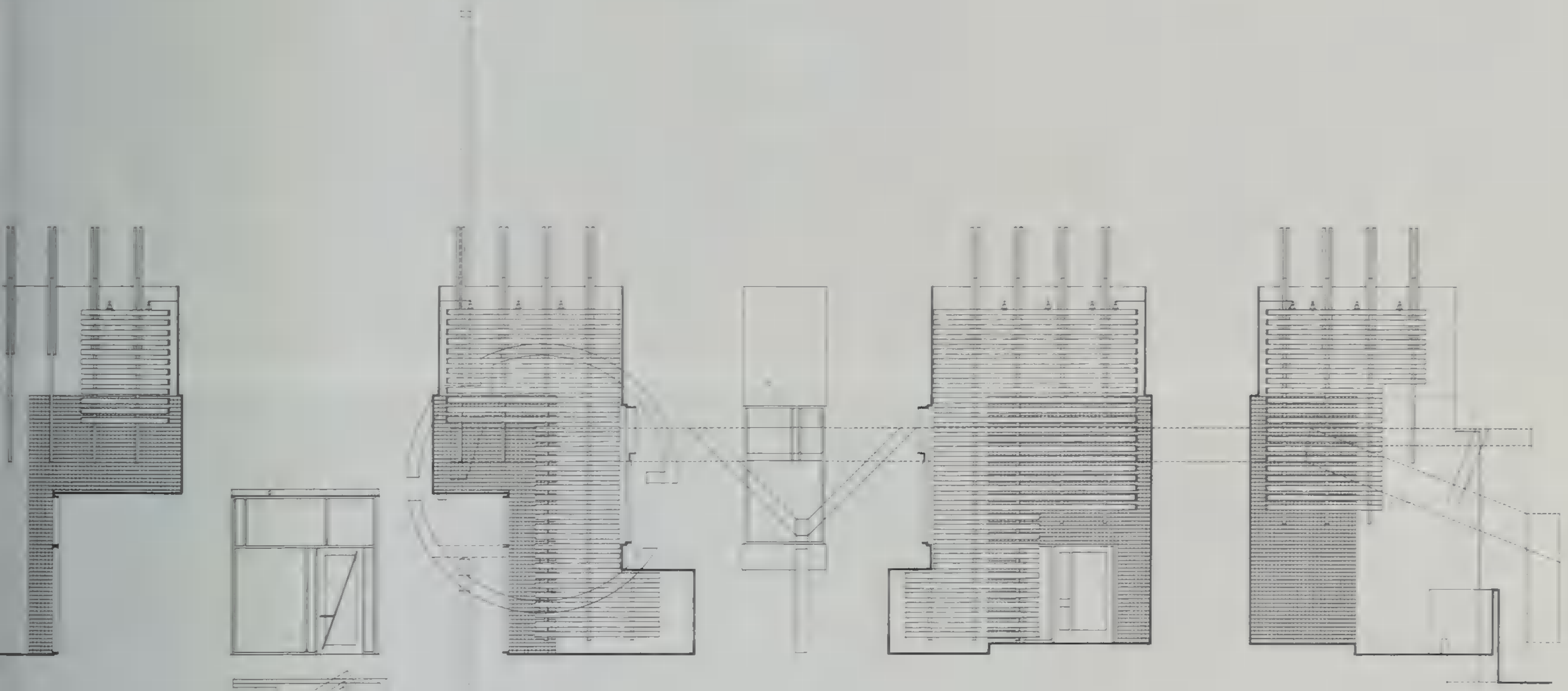
UPPER FLOOR

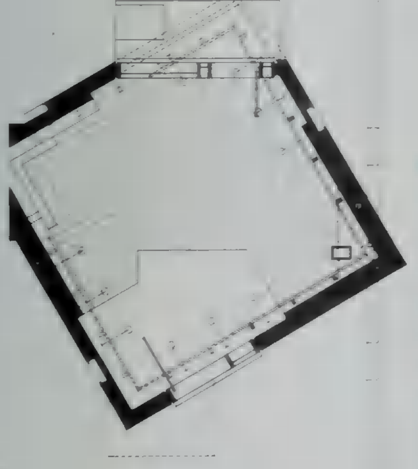
1. *Entry*
2. *Lobby*
3. *Information desk*
4. *Coat room*
5. *Gift shop*
6. *Tea room*
7. *Gallery*
8. *Courtyard gallery*
9. *Support facilities*
10. *Mechanical*
11. *Offices*
12. *Open*
13. *Board room*
14. *Library*



MAIN FLOOR







YARD
OR ELEVATIONS

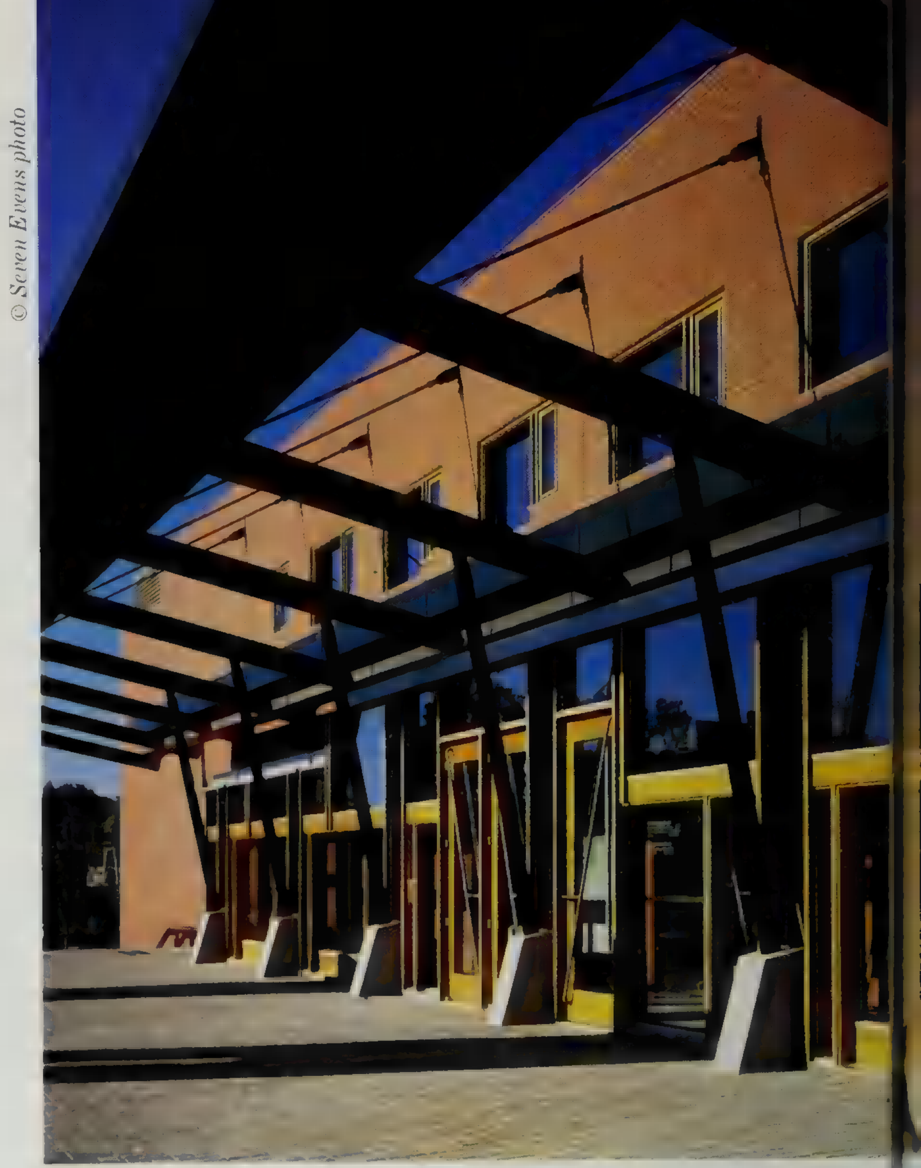
Up Close

Totemic structures. The parallel spaces that house the gallery's functions are interrupted by what the Patkaus call "totemic" structures. These include the round demonstration workroom and reading room, and a square outdoor courtyard influenced by the architects' admiration of the work of Morphosis. These are the end points of the visitor's path through the layers of construction of the building. The monumental columns that state the order of the building stand in front of a series of bold poured-in-place concrete forms that define this as a museum. The backdrop gives way to a highly articulated metal canopy that serves as one of the Patkaus' signature porches. A wood-framed glass wall forms a screen that reduces these compositions to human scale, admitting one to a broad hallway where a gift shop, information desk, and other introductory functions are located. Upstairs are offices and a library. Beyond lies the open gallery space with ceilings that reach up to 24 feet. Here the structure does not disappear, but becomes more abstract until one reaches the didactic objects that house demonstrations of how glass and ceramics are made. As visitors move through the layers of the building, they are always looking from inside to inside through frames of steel and concrete.

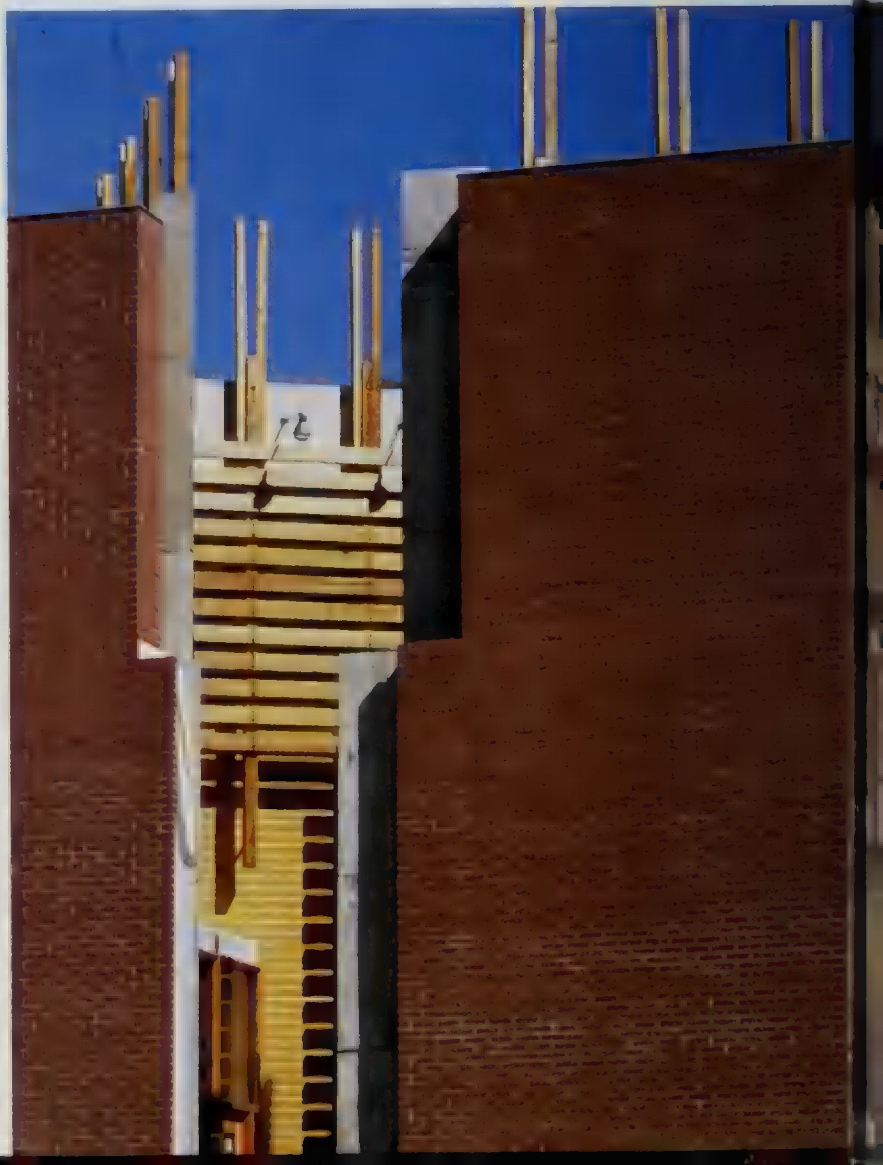
Materials are the medium as well as the message here. The simple palette includes poured-in-place concrete whose weep holes have been left unplugged, a rough textured concrete block, dark-painted steel that frames large expanses of glass, and some wood accents. These materials are seen in separate planes, so that the window assemblies, for instance, seem to slide out from behind the concrete-block walls, and the poured-in-place frame becomes visible above the interior walls.

This layering culminates in the interior courtyard, where closely spaced wood slats build up a skeletal wall whose vertical supports, slit into separate parts, reach up beyond the roof line. Baffled light from clerestories washes the rough materials, emphasizing their texture, while the circulation paths and functions confront one with the composite nature of every form: the staircases are tucked into the wall, and the rear window will eventually house a moveable glass shelving system that will support layers of glass displayed as art. The scale of the interior is as monumental as that of the exterior—emphasis is on construction rather than on type or function. These elements allow viewers to understand the relationship between the scale of the construction and their own size.

Credits
Canadian Clay and Glass Gallery
Waterloo, Ontario, Canada
Owner: *City of Waterloo*
Architect: *Patkau Architects—John Patkau, Patricia Patkau, Michael Cunningham, Tony Griffin, Peter Suter, design team*
Associate Architect: *Mark, Musselman, McIntyre, Comb Architects*
Consultants: *C.Y. Loh Associates (structural); Coanda engineering/Keen Engineering (mechanical); Sze Straka Engineers (field representatives); R.A. Duff and Associates/Coanda Engineering (electrical); Gabriel Design (lighting)*
Landscaping: *City of Waterloo*
General Contractor: *Ball Brothers, Ltd.*



© Steven Evans photo



© Patkau Architects photo

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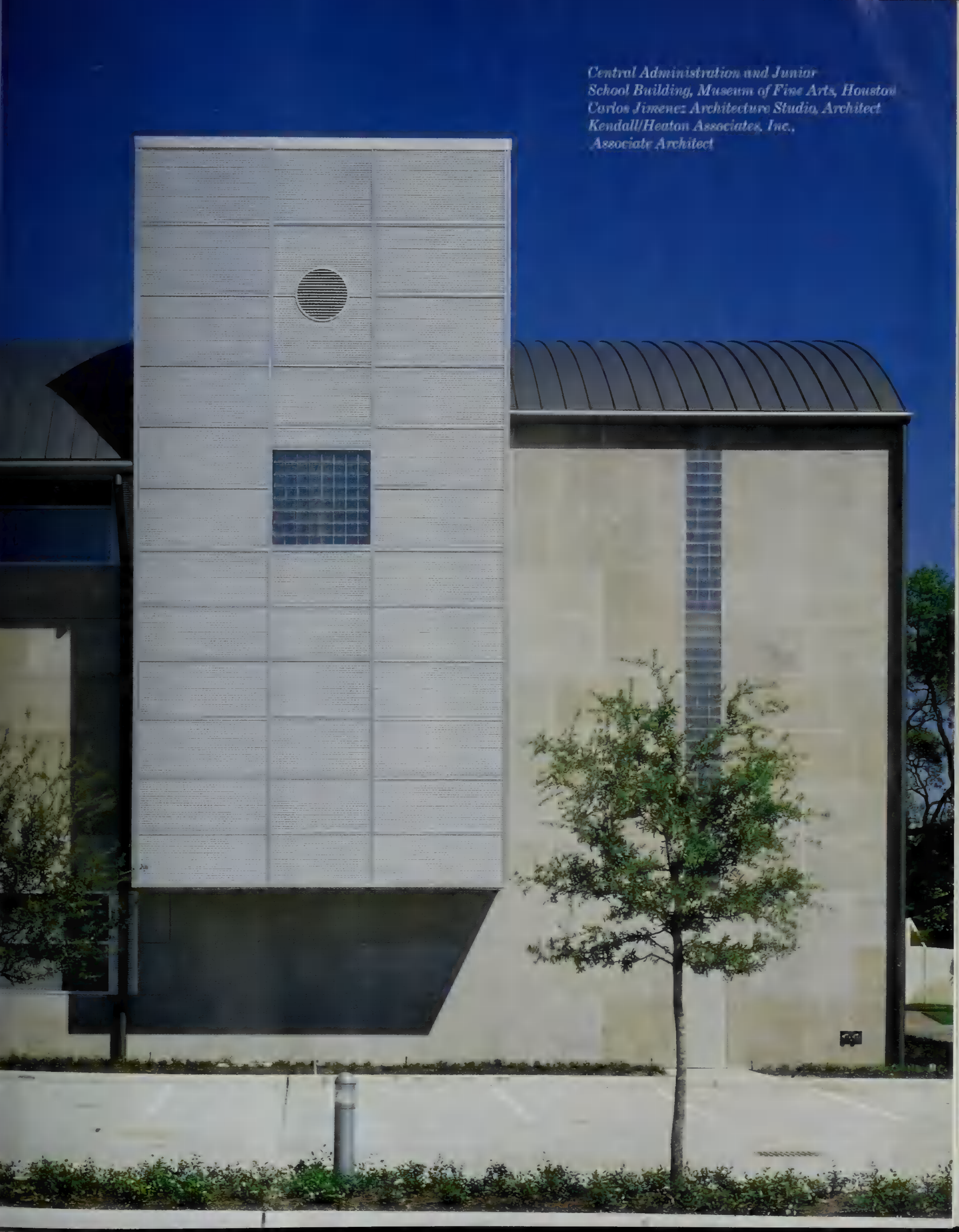
© Patkau Architects photo right

Arts Campus

The newest unit of Houston's emerging arts campus is an urbane presence scaled to the pedestrian.



Central Administration and Junior School Building, Museum of Fine Arts, Houston
Carlos Jimenez Architecture Studio, Architect
Kendall/Heaton Associates, Inc., Associate Architect

osely focused around the Lillie and Hugh Roy Cullen Sculpture arden (Isamu Noguchi, 1986), the Museum of Fine Arts, Houston as built over the years an "arts campus" based on a master plan by enturi, Scott Brown & Associates. Rather than stuff all the varied stitutional functions of a modern museum into one megastructure, e Venturi plan accommodates a variety of individual buildings of verse functions forming an urban campus setting. The Central dministration and Junior School Building by Carlos Jimenez Archi- cture Studio is the newest and most urbane of the ensemble. The uilding's civic-minded presence on the street encourages a pedestri- n promenade around the neighborhood of art institutions.

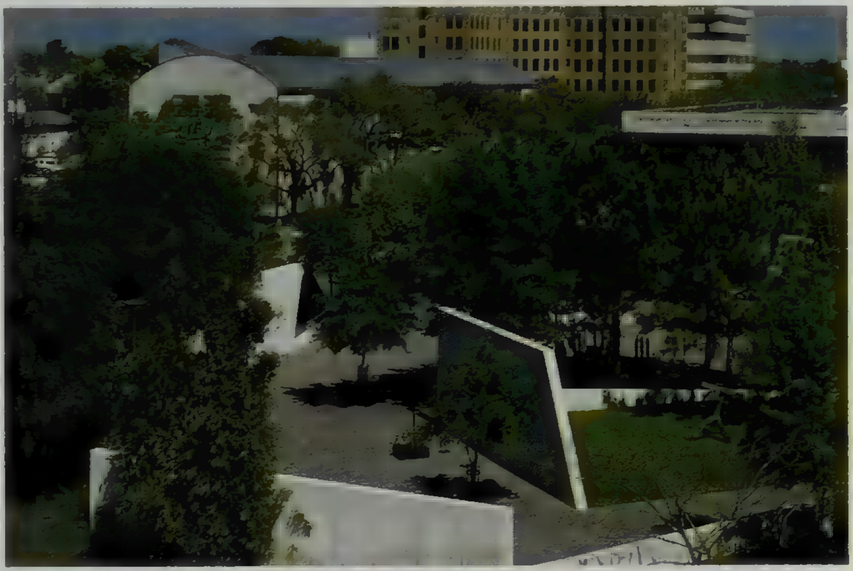
he original Neoclassical museum (William Ward Watkin, 1924) was racefully enlarged with exhibit halls by Ludwig Mies van der Rohe 958-1974) using forms deriving from Crown Hall at IIT, with its ver-the-roof steel girders. The gentle bow of Mies' Brown Pavilion llows the curve of the street and radiates a centering presence that akes the campus idea work, connecting and drawing in the dis- ersed branches of the museum. To round out the "campus," designs re under way by Rafael Moneo for new galleries to exhibit the useum's 19th century collections, to be completed in 1999.

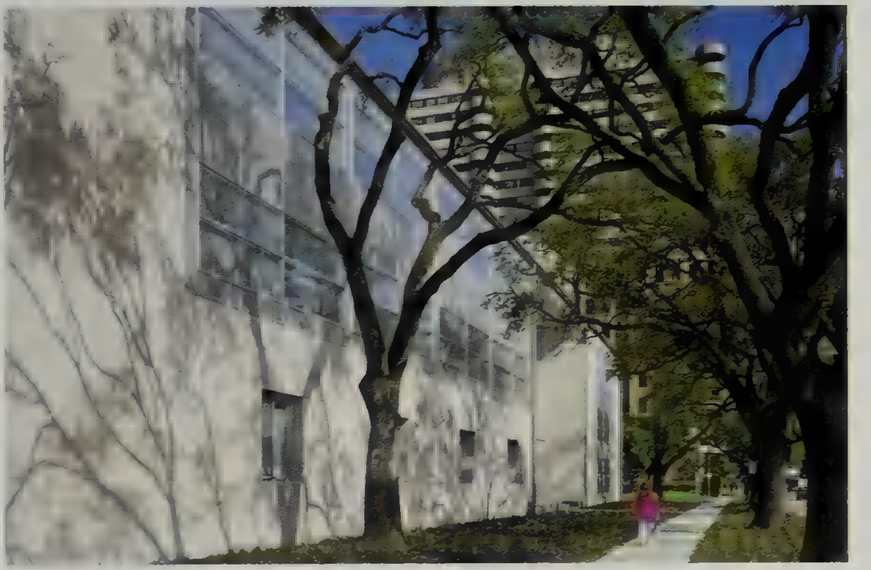
lad in limestone like the original museum and Mies' additions, the entral Administration and Junior School Building fronts directly on e street behind a screen of mature live oaks. In a manner very nusual for Houston, the parking lot is in the back, pleasantly land- caped and usable as an outdoor plaza. A covered vehicular drop-off ads directly into the school wing. The two wings of the L-shaped),000 square-foot plan reflect the dual program of the facility. The ree-story block facing the street houses all the administrative epartments of the museum, previously confined to Mies' basement nd other scattered sites. The two-story wing, extending along the de street, consists of art studios and classrooms, all receiving north ght.

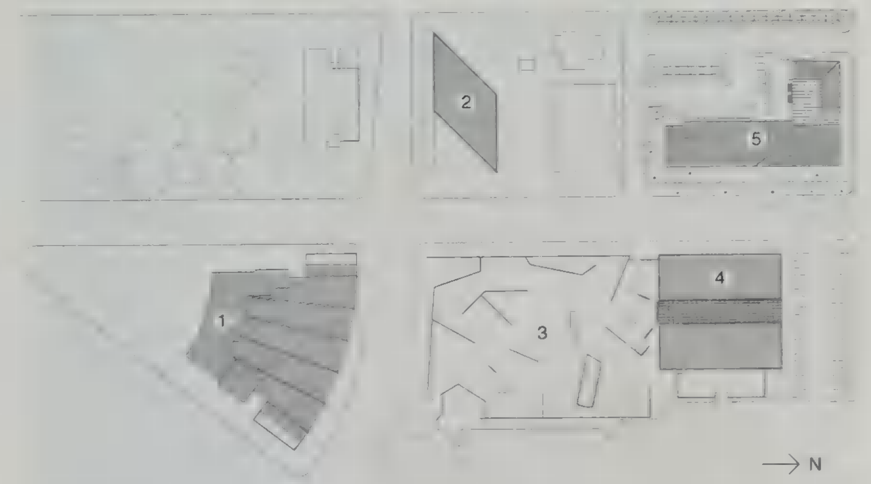
he vertical open space of the lobby joins the two wings like a dog run nd can be used by either the administration or the education branch- s for public functions. Although each wing has independent ntrances and internal organization, this shared space both unifies e building and mediates between two functions which otherwise ave little in common. Administrative floors are planned with perime- er offices whose partially glazed interior walls admit natural light to the central open work areas. In the education wing, studios line n interior street, a meeting place for school activities, and display pace for student artwork.

lthough the largest of Jimenez's designs to date, the museum roject retains the clarity of organization and simplicity of form that's onsistent throughout his work. Jimenez notes that, contrary to the ommon expediencies of today's inexpensive, throw-away buildings, the new museum building illustrates a commitment towards building ore durable structures that can resist the vicissitudes of fashion and rogram. Buildings remain not in the vertiginous present but in the radual unfolding of their futures. Architecture becomes the residual, et ever-present space in between." *Gerald Moorhead*

© Paul Hester and Lisa Carol Hardaway Photographers photos.

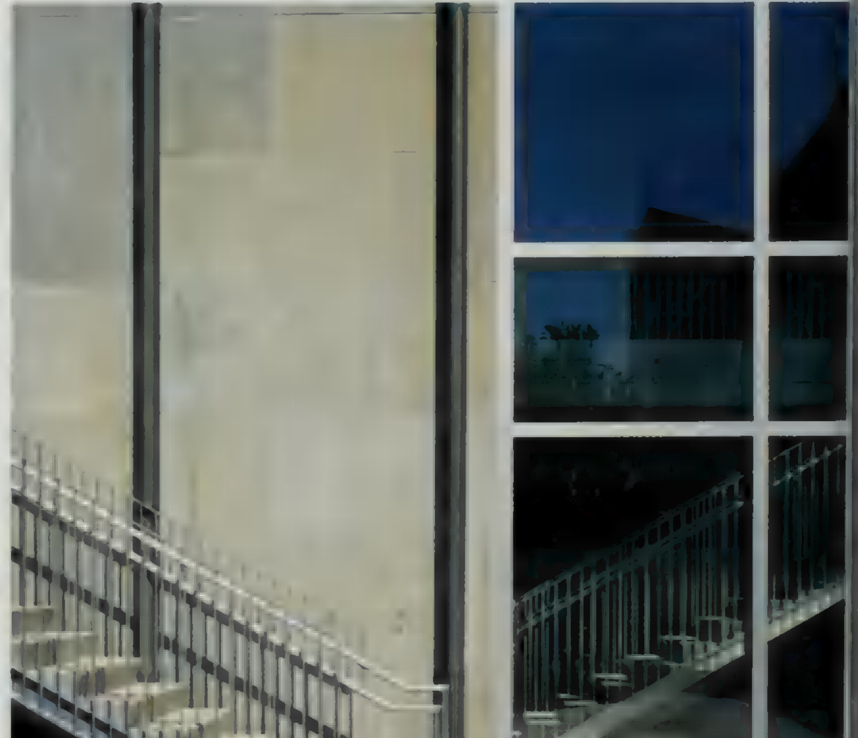






1. *Existing Museum of Fine Arts*
2. *Contemporary Arts Museum*
3. *Cullen Sculpture Garden*
4. *Glassell School of Fine Arts*
5. *The Museum of Fine Arts Administration and Junior School Building*

Behind the sculpture garden (top photo), the reflective skin of the Glassell School of Art, S.I.Morris Associates, 1978) contains the outgrown art-education studios that in part necessitated the new project across the street (above). Wedged into the Museum's properties is the shiny parallelogram of the Contemporary Arts Museum (Gunnar Birkerts, 1972), rounding out the so-called "arts district" (see site plan).



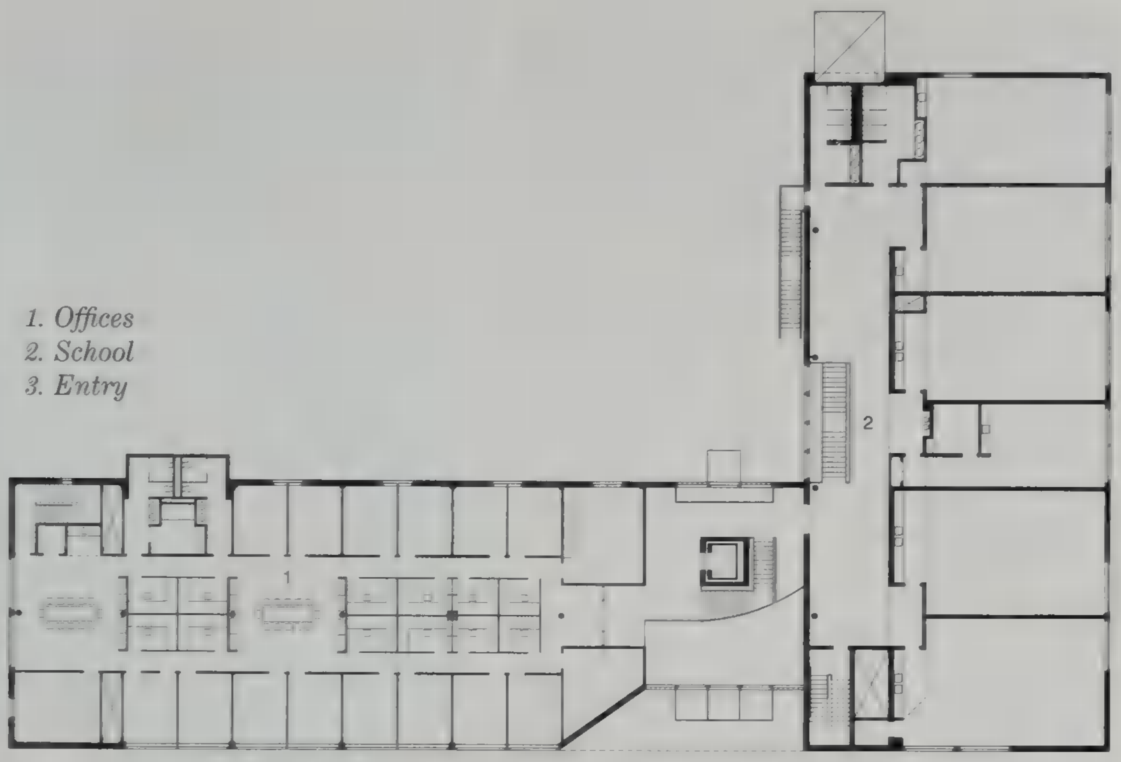
imenez has foregone his typical
alette of vivid colors for the
ubdued tones of limestone and
ear anodized aluminum. The
imple volumes are crisply
etailed. Windows are either
anged together and held flush
ith the stone face or treated as
ingular, deeply punched open-
ngs.

ertical bands of glass block and
ear glass define the lobby that
oins the wings of the building
opposite, top left). At the street
ntrance (opposite, top right),
he full height of the lobby draws
he occasional pedestrian in, an
ppropriate civic scale but not
verbearing.

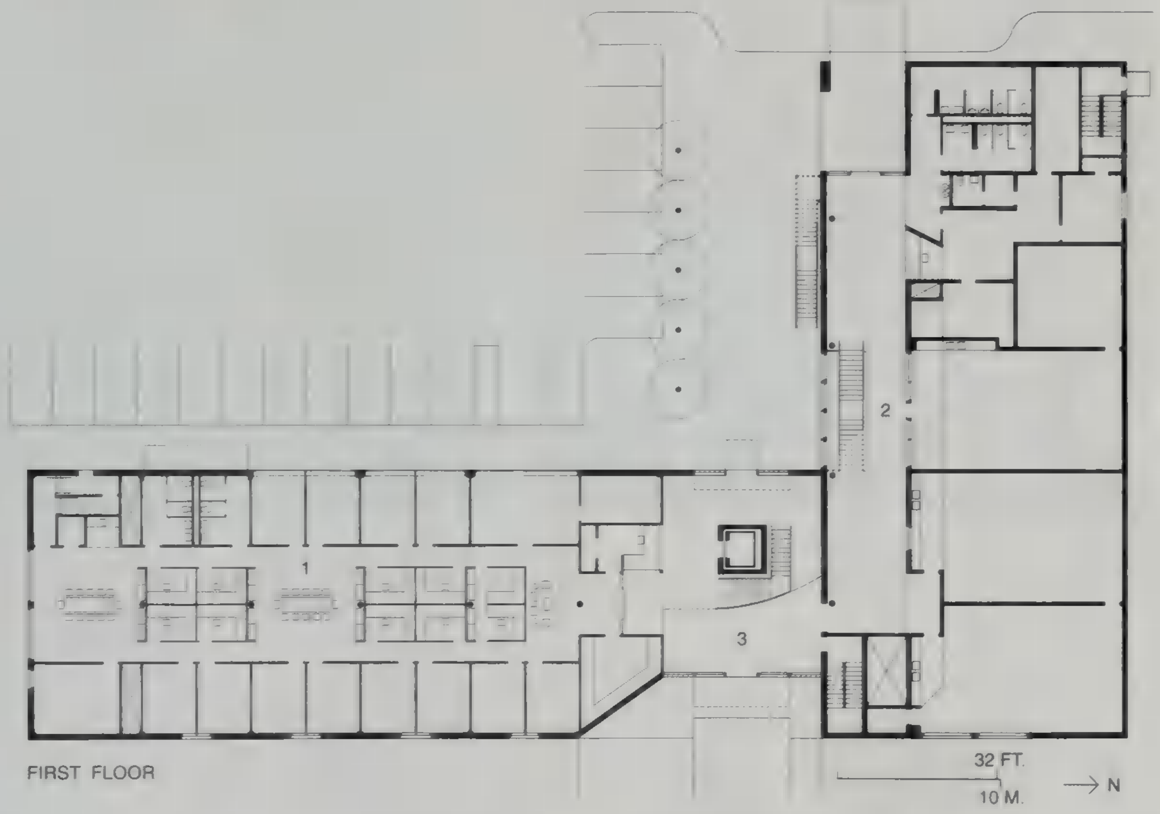
he student drop-off canopy
opposite, lower left) leads direct-
y into the "internal street" that
rganizes the education wing.
he aluminum engaged tower in
he background contains toilets,
anging over the wall like the
atrine of an old medieval
ortress. The restrained comple-
ment of material—stone, steel,
luminum, glass—is simply
etailed, as seen at the court wall
f the education wing (opposite,
ower right.)

he design manages to eschew
ny cues to trendy fashion, styl-
stic references, or even
eometric abstraction. The
irectness of the forms and
paces is calmly satisfying, the
naterials solid and rich without
eing ostentatious.

1. *Offices*
2. *School*
3. *Entry*



SECOND FLOOR



FIRST FLOOR

Filled with light, the transparent three story high lobby is an airy link between the wings (opposite). The marble-clad elevator shaft, the only instance of a precious material in the building, is loosely wrapped by the glazed stair (top left and right).

Seemingly quiet and uncluttered in these photographs, the interna street (lower left) is normally raucous with children, colorful artworks taped to the white walls. Office areas (an office is shown at lower right) are calmer but also filled with light and activity.

Credits

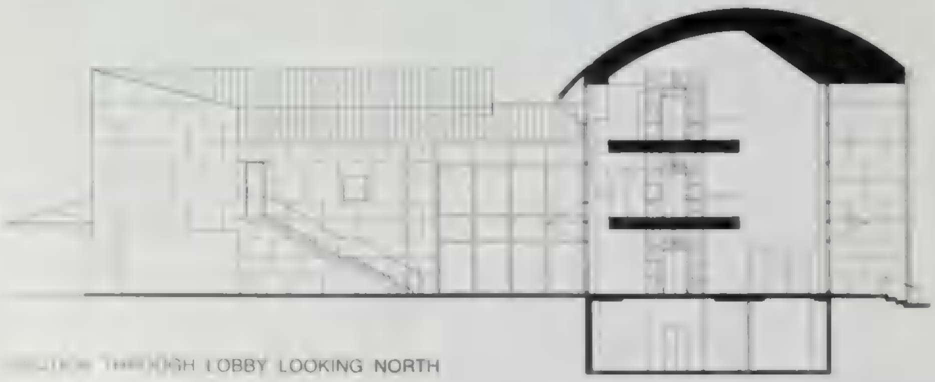
Central Administration and Junior High School Building Museum of Fine Arts Houston, Texas

Architect: *Carlos Jimenez Architecture Studio—Carlos Jimenez, designer; John H. Bowley, Robert Fowler, Eric Batte, project team*

Associate Architect: *Kendall/Heaton Associates, Inc.—Bill Kendall, Larry Burns, Warren Carpenter, project team.*

Consultants: *C.B.M. Engineers, Inc. (structural)—Joe Colaco, Prudencio Febre. I.A. Naman + Associates Inc., (MEP)—Tom Bay, John Spa. Walter P. Moore and Associates, Inc, (civil)—Edwin Frederichs. Dennis Wright & Associates Inc. (landscape)—Dennis Wright. Fuller Dyal & Stamper (graphics)—Herman Dyal, Curtis Roberts. Buescher Inc., project management—James Buescher.*

General Contractor: *Miner Dederick Companies—John Czapski, Dan Shead.*

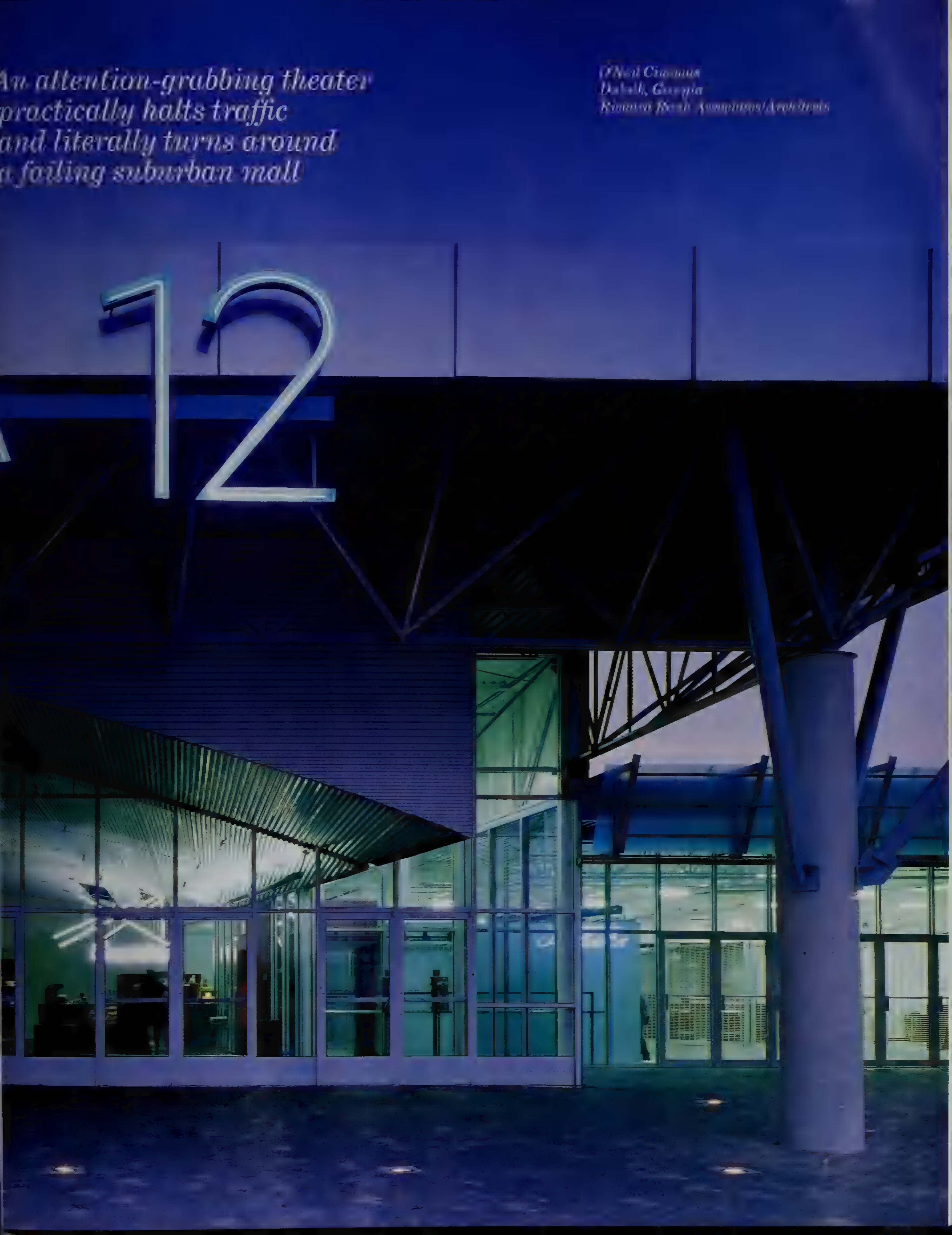


SECTION THROUGH LOBBY LOOKING NORTH

Strip Stopper

An attention-grabbing theater practically halts traffic and literally turns around a failing suburban mall

O'Neil Cinemas
Dekalb, Georgia
Kenneth Beck Associates/Architects

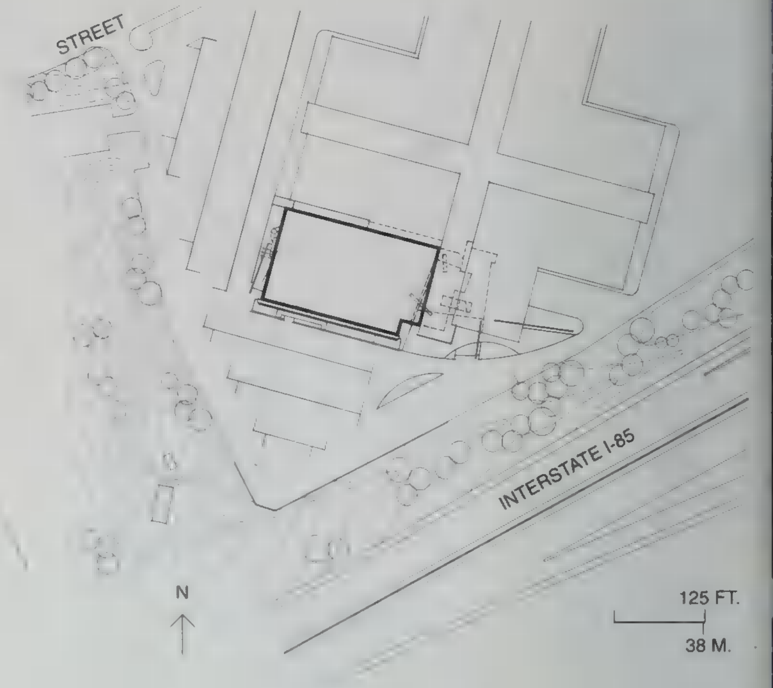


The site is north of Atlanta in Gwinnett County—during the late 1980s, the fastest-growing bedroom community in the U.S. Like many new suburbs, the entire county centers around a single sprawling mass of giant shopping malls and clogged highways that replace traditional town centers. Says architect William Rauh, "It's all a tribute to shopping frenzy." Alongside one such highway lined with closely packed competing signs for individual concessions, the nearly vacant 10-year-old Duluth mini-mall stood little chance of attracting business. It presented its back to passersby, complete with loading docks. The new owner called in Rauh's firm for consultation. The architects recommended that he replace blank walls on the highway side with an enticing tenant noticeable enough to make drivers take the next exit and loop back over circuitous access roads—and create alongside a new, highly visible mall entrance.

Enter O'Neil Cinemas, a national chain with experience operating second-run theaters in shopping centers. O'Neil was a natural fit. Economy-ticket houses generate a lot of traffic, offering many film choices and running them only so long as there's the interest to make showing them profitable. With virtually no budget to advertise elsewhere, second-run theaters rely on signs displaying titles to lure spur-of-the-moment viewers. And because movie-goers tend to use parking at night, they are a natural complement to daytime shoppers. But, in the surrounding checkerboard of neon signs, simply adding more wouldn't be enough. O'Neil, not accustomed to putting up theaters that got attention as *buildings*, was hesitant after analyzing Rauh & Associates' recommendations, but was willing to be convinced that architecture could be its attention-getter.

First, the architects demolished most of the existing mall's highway side and replaced it with a 26,000 square-foot building with 1,808 seats in 12 auditoriums. They carved a new theater lobby out of a former dead-end mall corridor, which they rerouted around the lobby where it leads to the new retail entrance (see plan). The corridor is closed off by means of roll-up security screens after shopping hours. Finally, a new unified facade stretchies more than 400 feet across the entire complex, concealing loading docks behind a mall-sign wall (right in site plan). The vast scale does more than hold its own against its hodgepodge surroundings.

In this land of concrete block and stucco, the architects' choice of corrugated-steel wall and roof panels was another major factor in making the facade stand out. Three patterns, ranging from 3/8- to 1 1/2- inch ribs, are finished in factory-applied silicone-polyester paint or a clear finish, producing a silvery natural color. They cover both the new steel auditorium structure built on slab-on-grade and the remaining masonry structure, producing a light, bright relief from the surrounding norm. The effect is enhanced by a 194-foot-long massive round gutter across the auditoriums, lit at night by continuous fluorescent billboard lights which produce, in Rauh's words, "a Star Wars light saber." His firm's choice of unusual cladding did not come without its problems. Despite careful detailing on construction documents, workmen referred to the material as "chicken-coop fixings," and tried to drive attachments through it at random, starting new holes when previous attempts failed to reach home. Deliverers ran their trucks over unloaded bundles. (To learn how the architects and construction managers overcame this obstacle, see *Up Close*.) Given these problems, the fact that the building came in at $55 per square foot became a [illegible] achievement. Commenting on the building's avant-garde a[illegible] in this solidly middle-class milieu, Rauh observes that cinemas are among the few settings where people expect the unusual. *Charles K. Hoyt*

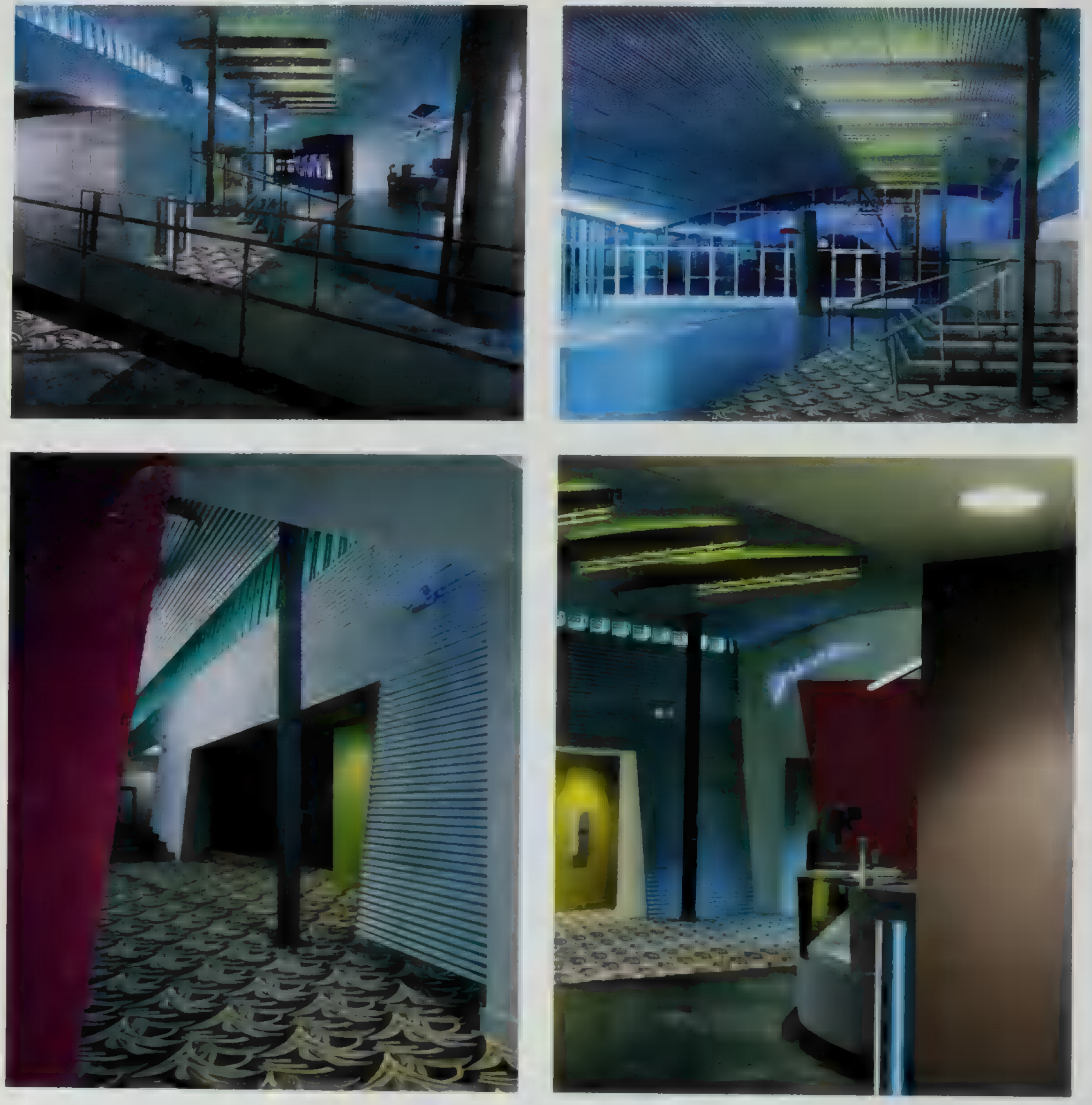


One of the architects' tasks was to keep motorists from losing track of the new building once they had spotted it from the Interstate. While they loop back on circuitous access roads, they have in sight the sculptural form created from an exit and secondary access (bottom photos) located at the opposite end of the new auditorium block from the main entrance and exit.

The composition includes a free-standing fiberglass-reinforced plastic panel, which seems to float before its more-solid background. The new theater main entrance (top photo, center) is carved out of the masonry-construction in a high bay of the original mall. A new entrance to the mall is located to the right.

CINEMA 12

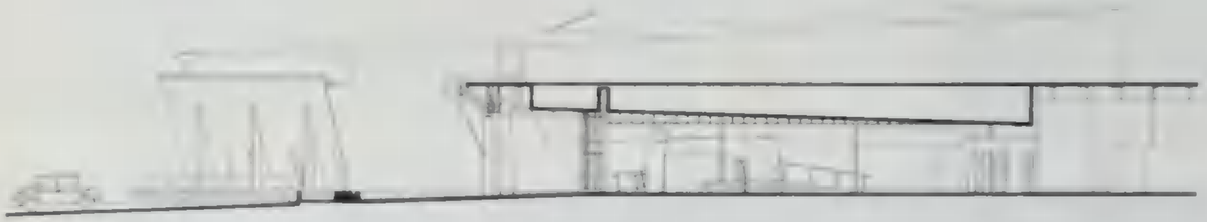
Double Vision, Inc. interior photos

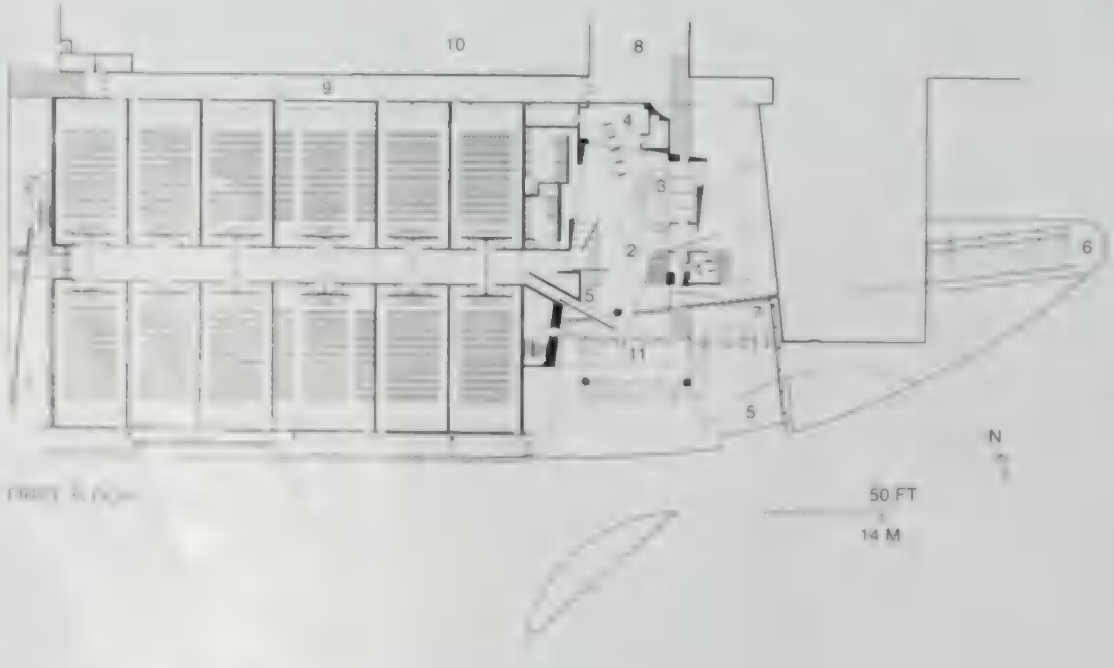


Up Close

A material ahead of its time. When architect Richard Rauh saw workmen randomly punching fasteners through the lobby ceiling ignoring carefully detailed placement drawings, he ordered them to take it down and lay it out on the ground. Then he, himself, put pieces of tape on the proper locations. Despite the problems Rauh had getting workmen and delivery people to treat corrugated steel with respect (see text), he believes that attitudes as well as technology are changing. He and construction manager Fred Gaines stressed to the crew and other staff that the cinema must be a showcase building which they could bring their families to with pride. Technological innovations included leaving edges of sheets exposed at corners and sealing joints with neoprene gaskets instead of the usual angle covers.

Credits
O'Neil Cinemas
Duluth, Georgia
Client: *O'Neil Theaters, Inc.—Steve Moss and Juan Nevarez, representatives*
Architect: *Richard Rauh & Associates/Architects—Richard Rauh, principal-in-charge of design and management; Ann Fitzgerald, principal-in-charge of technology and production; Randall C. Miller and Rob Miller, design assistants; Henry Anderson, Miguel Baeza, Blaine Bonadies, Molly Cherney, Jonathan Elmore, Mark Gardner, Karen Lightsey, Ellena Lin, Steven McCall, Richard Powell, Randy Zaic, project team*
Engineers: *Uzun & Case (structural); B&A Consulting Engineers (mechanical and electrical); Columbia Engineering (civil); United Consulting Group (testing)*
Consultants: *Irwin Seating Company (seating); Kirby Building Systems (pre-engineered steel frame); James L. Cox & Associates (door hardware); Jon Bajon, Inc. (cinema equipment)*
Construction Manager: *Gaines Construction, Inc.—Fred Gaines, field manager*





First floor

1. *Tickets*
2. *Lobby*
3. *Concessions*
4. *Video games*
5. *ADA ramp*
6. *Mall sign*
7. *Mall and theater entrance*
8. *Original mall corridor*
9. *Auxiliary exit*
10. *Original retail space*
11. *Main exit*

Junior Mints
Junior Mints
Junior Mints
Junior Mints

Coming: Housing That Looks Like America

Having slept for seven straight years, the multifamily housing sector awoke slowly in 1993 and took a look around. Like Rip van Winkle, it discovered that many things had changed during its prolonged slumber. Gone were the passive-loss tax write-offs and the accelerated depreciation schedules that had fueled much of the building frenzy of the early 1980s. Gone too were many of the Baby Boomers, who were now reaching middle age, raising families, and buying houses rather than renting apartments.

But the landscape was not without bright spots. One of the largest waves of immigration in U.S. history had swept a new generation of renters to the nation's shores and an aging population had created demand for retirement housing. At the same time, a rising divorce rate and a growing acceptance of alternative households had brought about a pool of people who were either single again or were looking for housing in which more than one family could live together.

While changing demographics have created new opportunities, total demand for multifamily housing remains far below the peaks hit in 1985 (when about 700,000 dwelling units were started) and 1972 (when more than 1 million were started). Rock bottom was hit in 1992, when less than 200,000 units were built. Having increased 14 percent in 1993 and then 23 percent the next year, the multifamily sector is set to grow 7 percent this year, according to F.W. Dodge. That will push starts to 240,000 units.

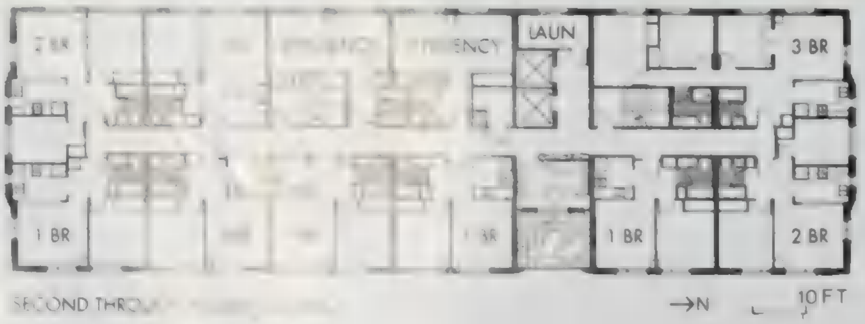
Perhaps the most important force shaping the multifamily market today is the changing ethnic mix of America. Of the 22-million increase in the U.S. population in the 1980s, 8.7 million—or nearly 40 percent—was due to immigration, states a report by the Joint Center for Housing Studies of Harvard University. Because immigrants have higher birth rates than other Americans, their growing numbers hav forced the Census Bureau to significantly adjust its forecasts for the next century. Instead of seeing the U.S. population leveling off at 30 million in 2030, the Census now says it will grow steadily for at least the next 50 years, hitting 350 million in 2030.

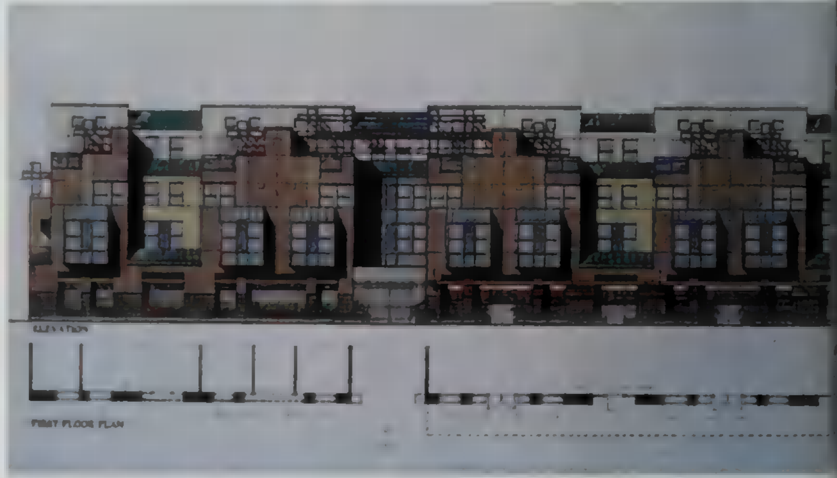
From gateway cities to suburbs

Since immigrants tend to have limited incomes, they usually rent rather than buy housing. But William Apgar, executive director of Harvard's Joint Center for Housing Studies, explains that these people also tend to be hardworking and ambitious. "Many immigran push into home ownership relatively quickly," says Apgar. "The long term pattern is for them to go from gateway cities to the suburbs." Their immediate impact, though, has been to offset what would have been an even greater decline in rental housing in the 1980s and '90s.

The 1980s also witnessed a diversification of household types, says Peter Rowe, dean of the faculty of design at Harvard's Graduate School of Design and author of *Modernity and Housing*, a book pub lished by MIT Press in 1993. "The traditional family" of two marrie parents with children "is only 27 or 28 percent of the U.S. population," states Rowe. As a result, housing types appropriate for households headed by single parents or for divorced parents with parttime kids—to mention just two—will have to be built.

As recent immigrants move up the economic ladder and into the suburbs and as families continue to fracture, residential densities wi increase in suburban areas, says Rowe. Single-family houses will be subdivided into multiple units, "granny flats" or accessory apartments will be added to single-family neighborhoods, and some older office buildings and industrial structures may be converted into





Residents range in age from 2 to 90 at the Nathalie Salmon House, an intergenerational project designed by Nagle Hartray Associates on Chicago's North Side (left). At San Pablo Commons in Emeryville, California, Pyatok Associates also brought different generations together by placing two-story family townhouses above retail and one floor of apartments for senior citizens on top of it all (above).

hanging demographics and household patterns re reshaping the housing needs of North America. rchitects are responding with new designs.

using. "You'll see more innovation in mid-range-density housing," ys Rowe, "where 30 to 35 units are built to the acre and each has ect access to parking and the outdoors." Rowe also sees a reaction ainst the Modern movement's faith in standardized design and its lief that centralized agencies are the best way to deliver housing. oday there is a more contextual response to the massing, scale, and aterials of housing and more concern for housing's impact on the eetscape," states Rowe. At the same time, there is greater reliance the private sector and local organizations to deliver housing.

eaking through the barriers

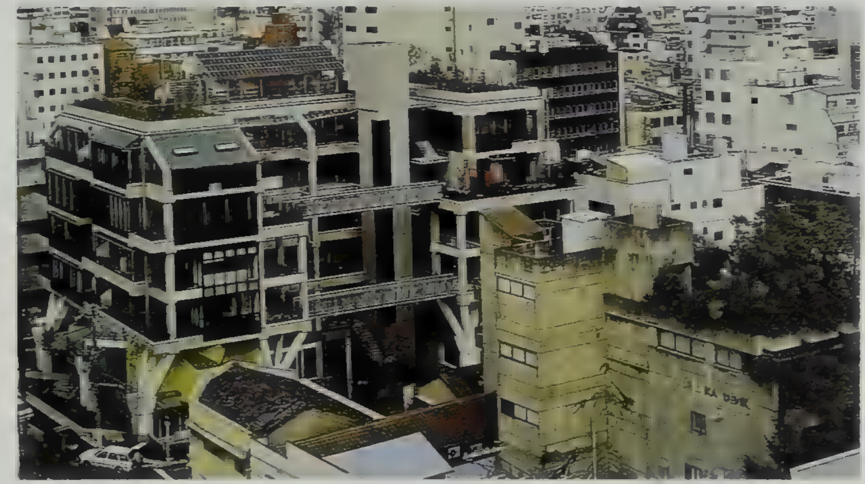
the past, American society has often segregated people by race, ass, and age. Although great barriers remain, a number of local ganizations and developers are quietly bringing different kinds of ople together. By building smaller and on scattered sites, some oups are able to overcome community resistance to low-income using. (See "Garcia Apartments," page 90). Other groups are building housing that brings different generations together. In Chicago, r example, Housing Opportunities and Maintenance for the Elderly cently completed the Nathalie Salmon House, which combines mily and student apartments with ones for the elderly (opposite, t). As designed by Nagle Hartray & Associates, Salmon House eaks free of the institutional mold of much elderly housing and ands as a handsome addition to its neighborhood. A similar ogram of intergenerational housing is behind San Pablo Commons Emeryville, California, designed by Pyatok Associates (opposite, ght). The four-story building will have 14 family townhouses above tail, with 11 penthouse flats for seniors on the top floor. Ironically, S. law prohibiting discrimination based on age is forcing the client, e city's Commission on Aging, to jump through some awkward gal hoops. To designate some apartments for seniors, the client will have to develop the top floor as a separate project with its own funding and elevator. All residents, though, will mix on the ground floor in a meeting room, rear courtyard, and building entrance.

A housing model from Scandinavia

Although not focused specifically on mixing age groups, the so-called cohousing movement proposes communities in which residents share certain facilities such as kitchen, dining, and meeting areas, while retaining their own dwelling units. Begun in Denmark about 20 years ago, the cohousing approach is now being tested in North America. In Sacramento, California, Kathryn McCamant and Charles Durrett, architects who are partners in the CoHousing Company, worked with a group of 25 households and architects Mogavero Notestine Associates to create Southside Park in an inner-city neighborhood (below left). The mixed-income, multi-ethnic community has helped revitalize an area where fading Victorian houses sat next to crack houses.

While some groups are bringing new notions of community to housing, others are re-examining it from a building-systems point of view. For several years, Stephen Kendall, vice president of a firm called Technology + Economics and an associate professor of architecture at Marymount University in Virginia, has been extolling the virtues of the "open building" system, in which the architect designs a structural and mechanical framework and residents build their own units within this. Just as commercial developers find it more efficient to let tenants fit out their own office space, residential builders could reduce their risk of miscalculating the needs of the marketplace by constructing flexible building systems within which residents could shape their own apartments. In Japan, the Osaka Gas Company built an experimental housing project, called NEXT 21, that employs such an open-building system (below right). *Clifford A. Pearson*

uthside Park is a 25-unit housing project in Sacramen- California, that includes a 500-square-foot common house d other shared amenities such a garden, a play area, and a orkshop. Built in an inner-city neighborhood of aging Victorian bungalows, the new community offers a mix of low-, moderate-, and market-rate houses on a 1.3-acre site. The architect for the project was Mogavero Notestine Associates.



© Y. Takase

Built by Osaka Gas as a demonstration of innovative building technologies, NEXT 21 employs an "open building" system, as well as new approaches for reducing energy consumption and waste production. The building's architecture was designed by Yositika Utida and the SHU-KOH-SHA Architectural and Urban Design Studio, while the design system for the 18 apartments was created by Kazuo Tatsumi and Mitsuo Takada.

Banner Building

Seattle, Washington
Weinstein Copeland Architects

Just like old industrial loft buildings and new office towers, the Banner Building in Seattle provides a basic structure and a design vocabulary, but lets residents build out their own spaces. Designed for artists who want to live and work in the same place, the condominium project offers rough two-story units with concrete floors, access to all utilities, and great views of Puget Sound. An owner's manual, written by the building's architect, describes the workings of the building and explains requirements for all construction done i the individual units. While such an arrangement is common with commercial projects, the Banner Building breaks new ground by bringing it to the residential market. In the process, it delivers a more flexible and less expensive form of housing that appeals to urban professionals a

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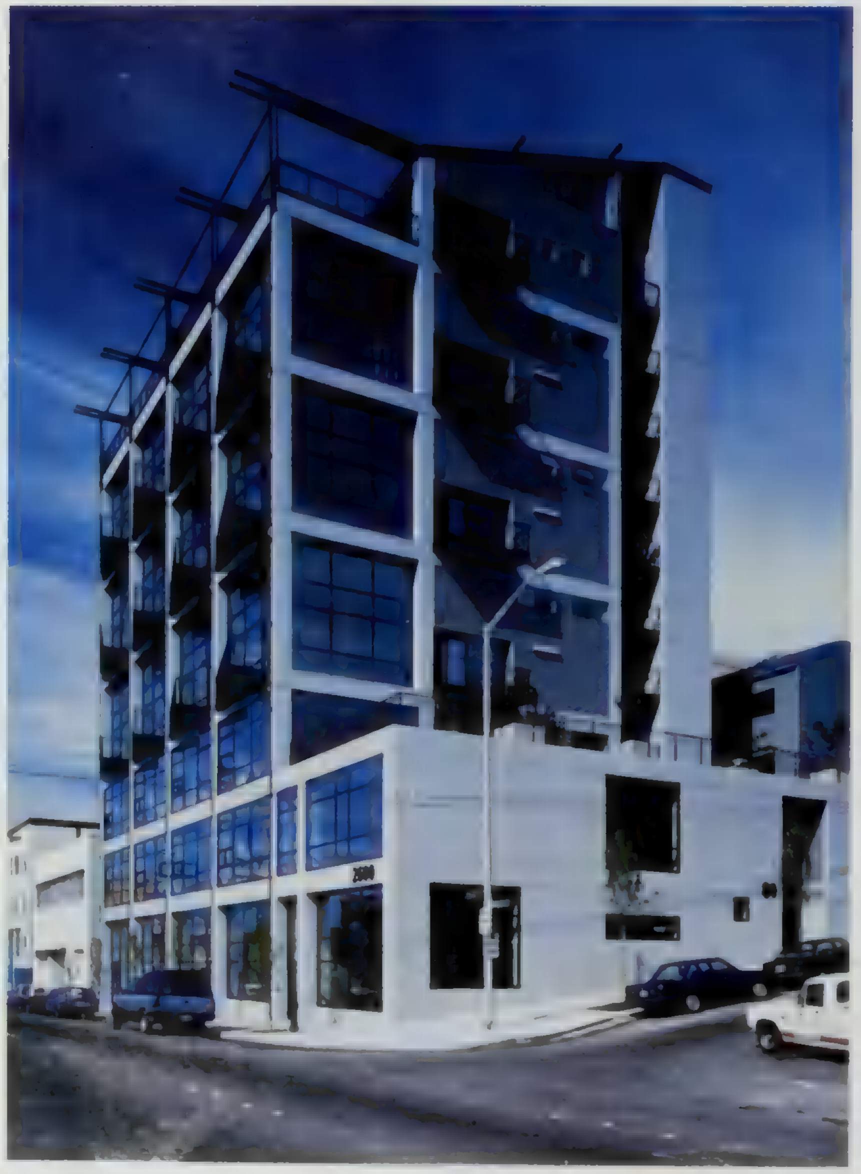
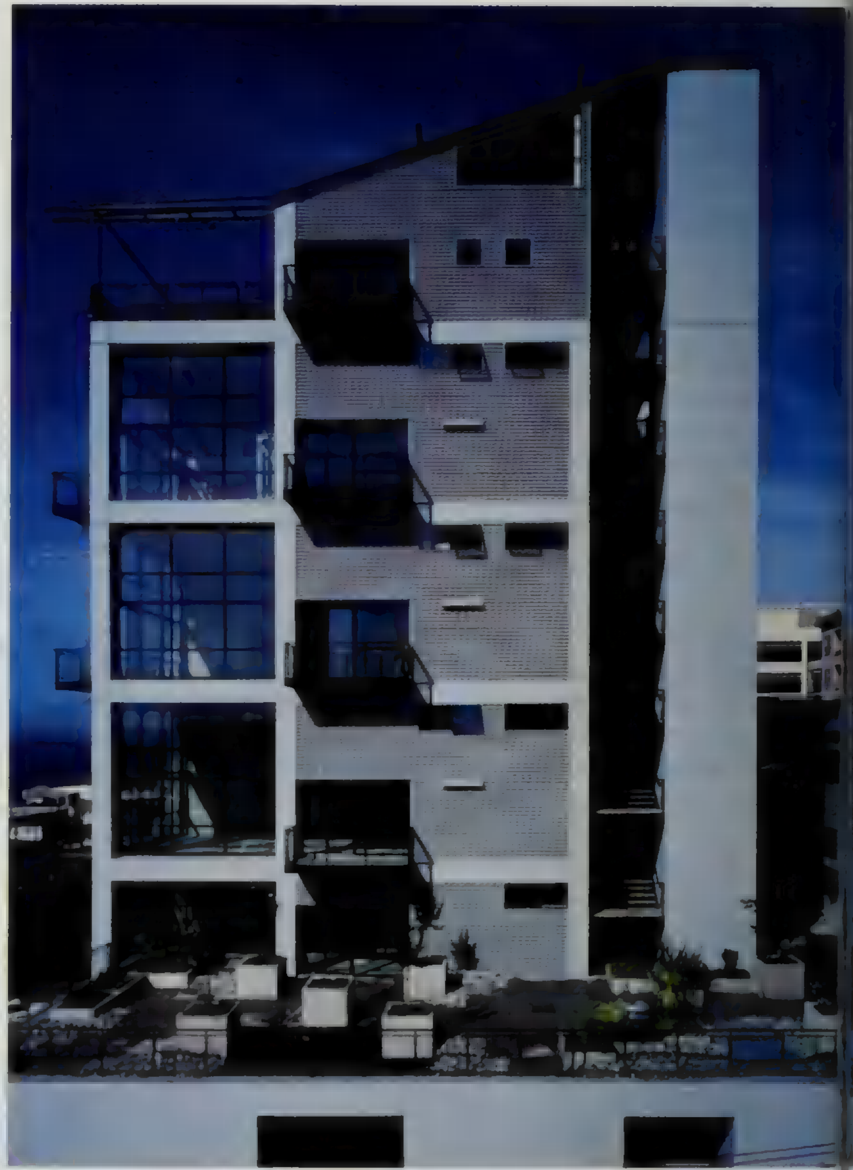
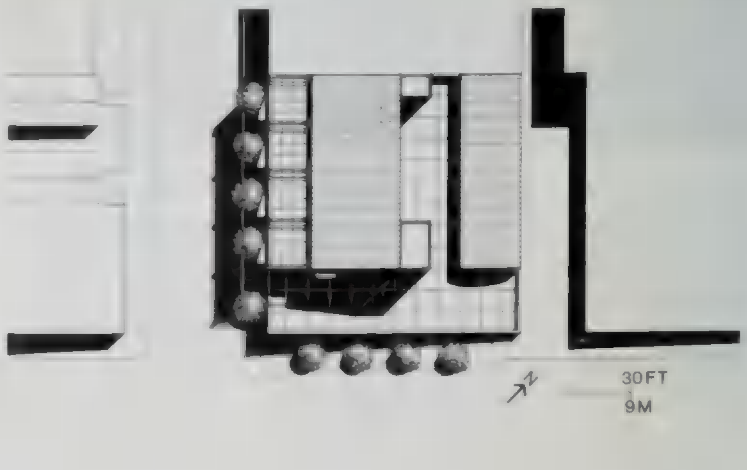
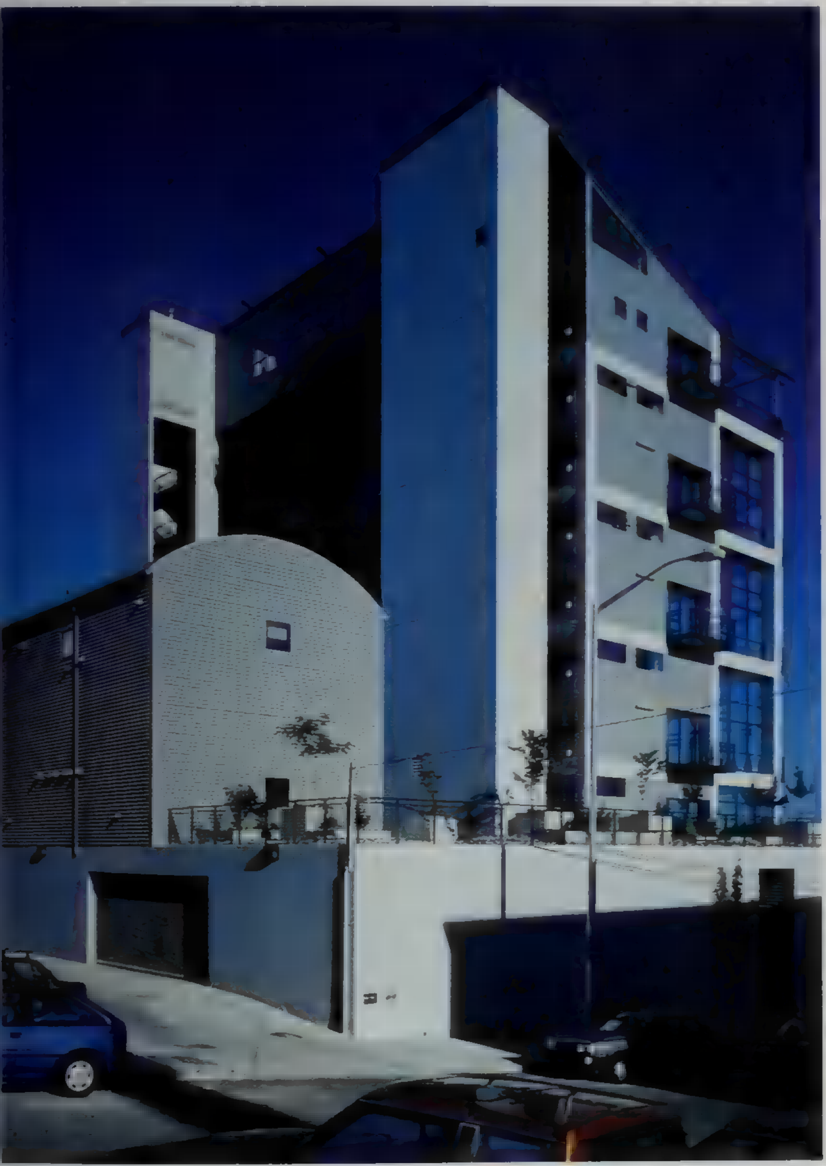
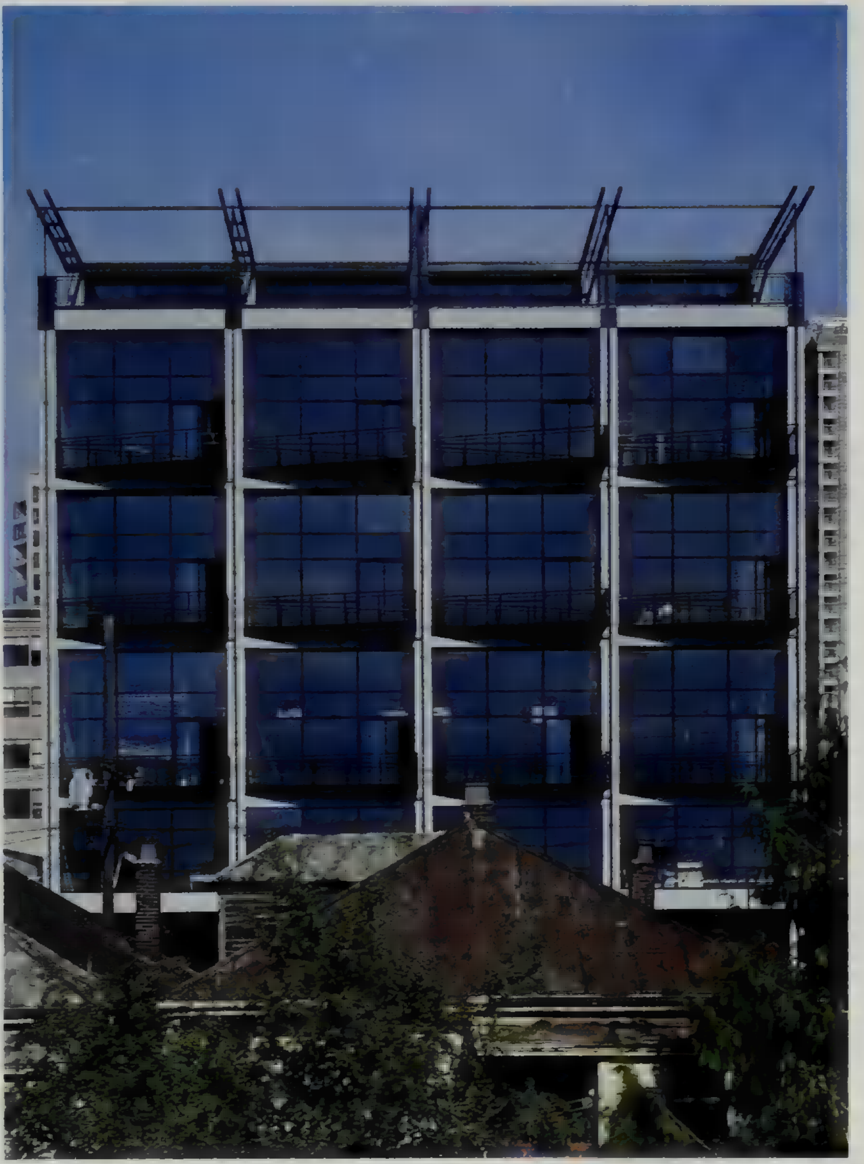






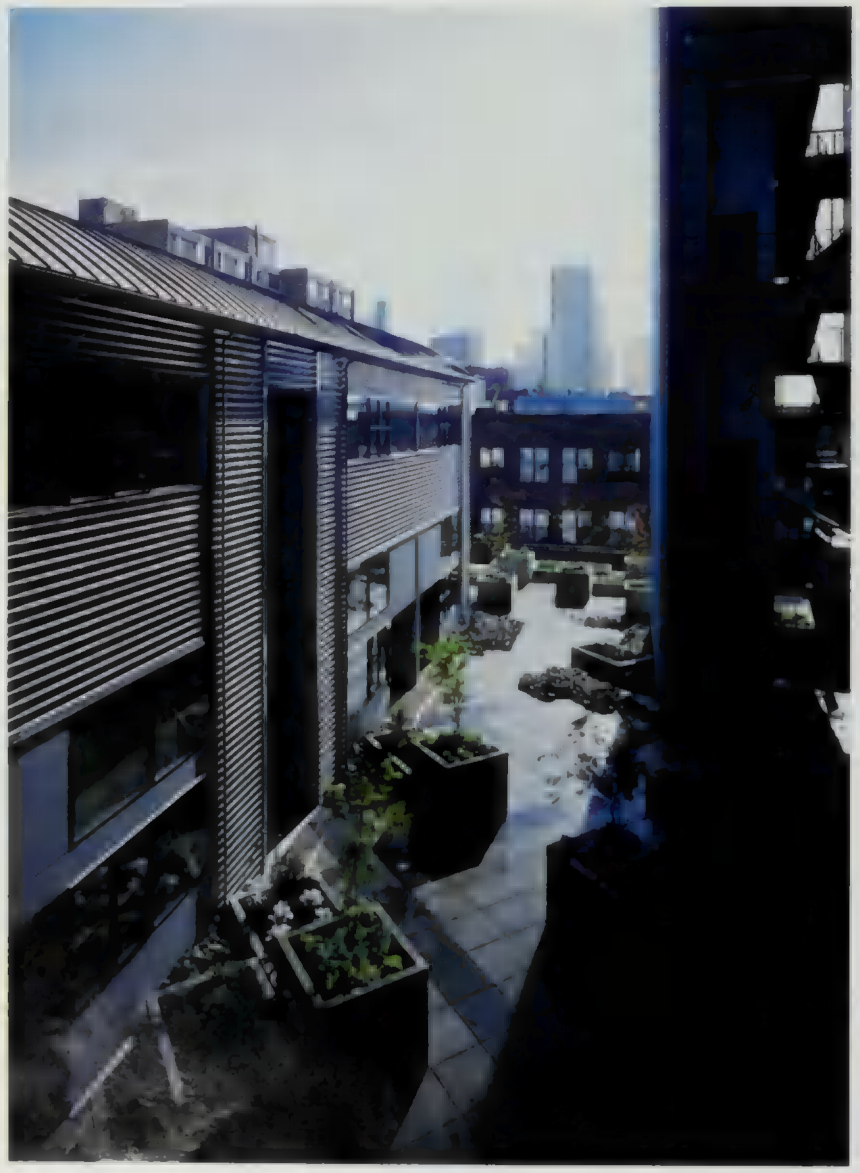
ll as artists. The idea was to ovide "good bones" on which e residents themselves could ild, says Ed Weinstein of Wein-ein Copeland Architects. "The ilding is the framework within ich artists can work," adds einstein. Although old loft ildings have been converted o live-work spaces in Seattle r many years, the Banner ilding is the first new project signed for this purpose. With its unconventional program, it is not surprising that the project's original developer, Koryn Rolstad, is not really a developer at all, but an artist with enough determination to bring together the necessary money and players. Rolstad, who runs an architectural sculpture studio called Bannerworks, wanted to create a community where art and commerce came together and where struggling artists could live with more established ones. To that end the project has three major components: a midrise condominium tower with 14 two-story live-work studios, a two-story rental building with four subsidized and two market-rate apartments, and a multi-level base with parking and commercial space. Rolstad herself bought one of the two penthouse studios on the top floor of the tower and has her Bannerworks operation ensconced in the base of the building. While the penthouse units have 2,400 square feet of living space, the other for-sale studios have 1,800 square feet on two levels. Units are bought as raw space with concrete floors on metal decking and utilities running up through walls. In the rental building, apartments were finished by the developer with 600-square-foot subsidized units

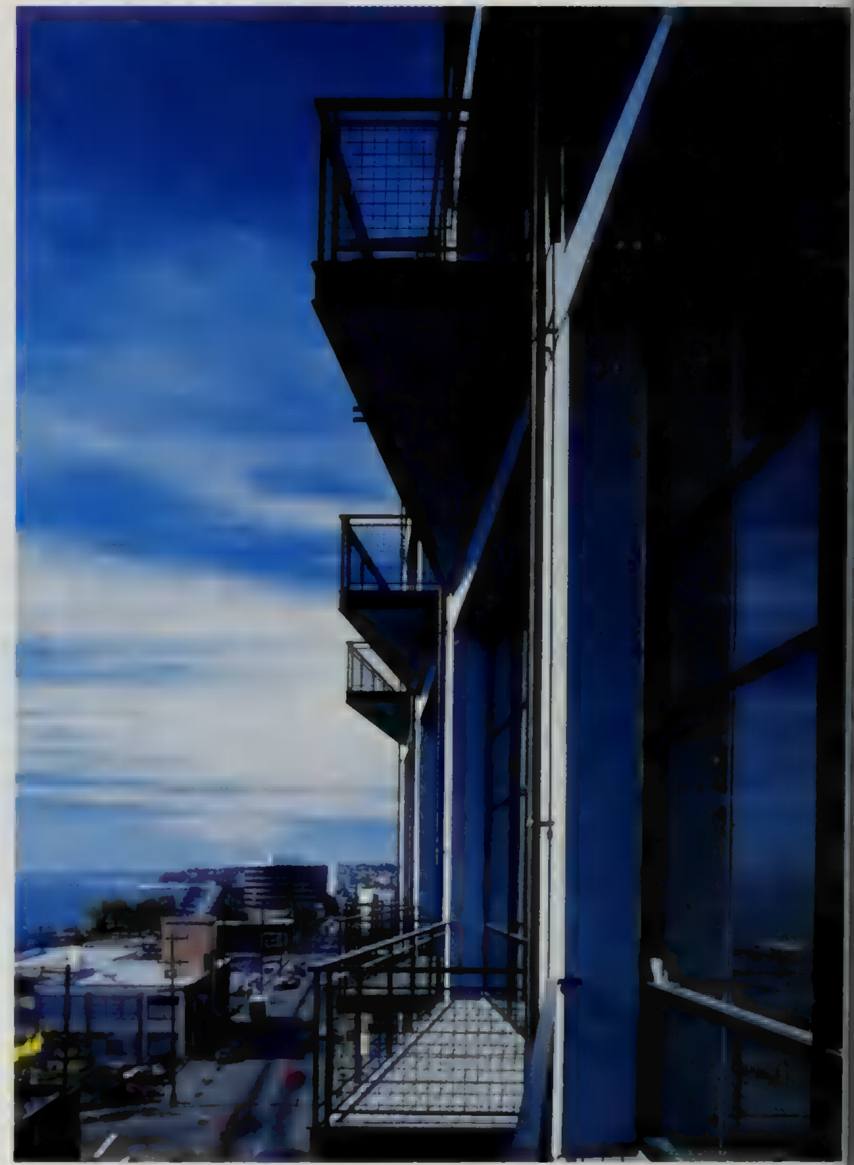




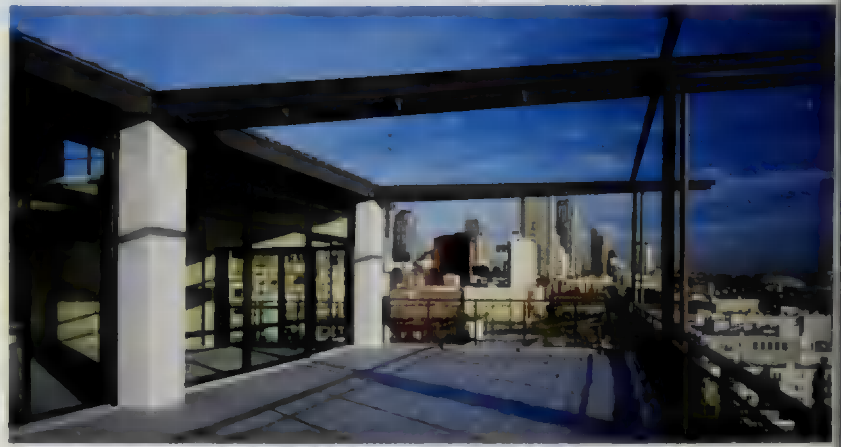
hile the midrise tower and the oject's base (photos opposite) e concrete-frame structures, e two-story rental building eft in photo above) is wood-ame. The Banner Building's est facade takes advantage of eat views of Puget Sound by aturing two-story expanses of mmercially available rtainwall with low-emissivity ass (right). By using standard roducts and inexpensive materials such as concrete and corrugated metal, the architects kept construction costs down to $65 a square foot and gave the building an industrial character in keeping with its neighborhood. At the same time, the architects used the building's mass to give it a presence on the skyline.

on the first floor and 1,200-square-foot market-rate units one flight up. Located in a transitional neighborhood north of downtown, the building proudly recalls the area's industrial past in the frank expression of its concrete frame and its use of corrugated-metal siding, metal balconies, and exposed rainwater pipes. Commercial and retail space on the lower levels link the project to its site, creating common ground for the building's artists and the area's other residents. Although large concrete panels on the base of the south side of the building are a bit stark right now, plans call for them to be enlivened by murals painted by residents. In fact, participation by residents in enhancing common spaces is as much a part of the project as their role in shaping their own living areas. A courtyard between the two residential buildings and a terrace on the roof of the condominium tower are intended to be landscape works in progress, changing over time. In addition, Weinstein extended corridors to eight feet wide and kept them outdoors so residents could install their own art and plantings. Outdoor circulation helped keep construction costs down to $5.8 million (or about $65 per gross square foot). But a tight budget also eliminated sun screens that Weinstein designed for the building's west facade, forcing residents to block the afternoon sun with internal devices such as blinds. Although it just opened in the fall of 1994, the Banner Building has already won some design awards and is attracting the attention of other developers interested in targeting niche markets such as artists and young professionals. *C.A.P.*

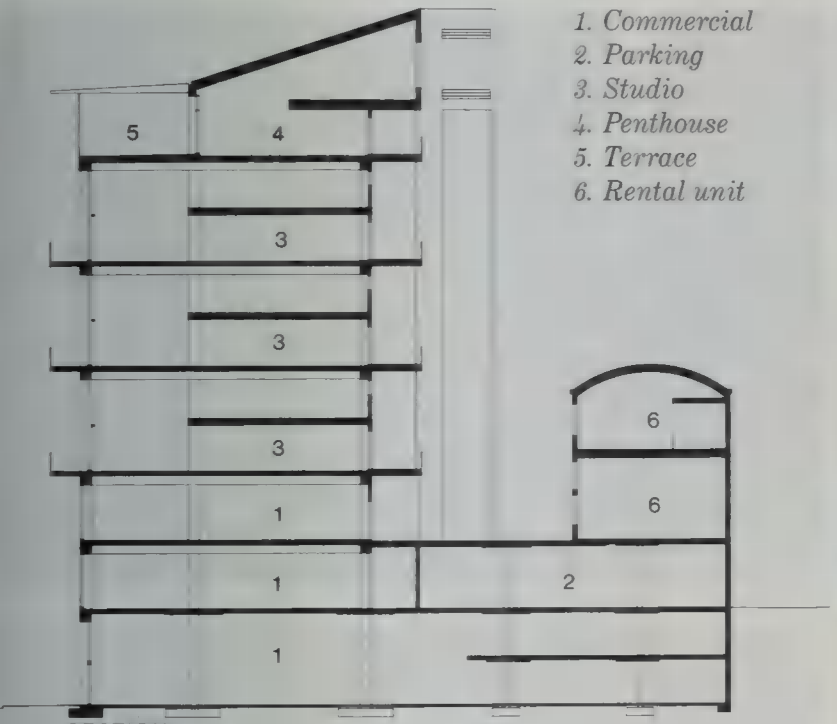




To help create a sense of community, the project includes a variety of shared outdoor spaces such as a central courtyard (above) and a rooftop terrace (right). Outdoor corridors were also made wide enough (8 feet) to let residents congregate there. Private balconies off live-work studios are angled to ocean views (above right).

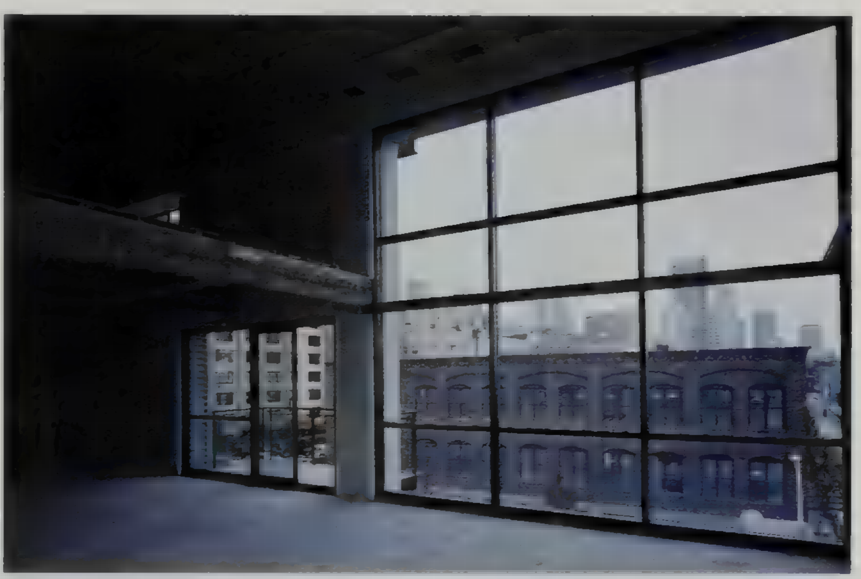


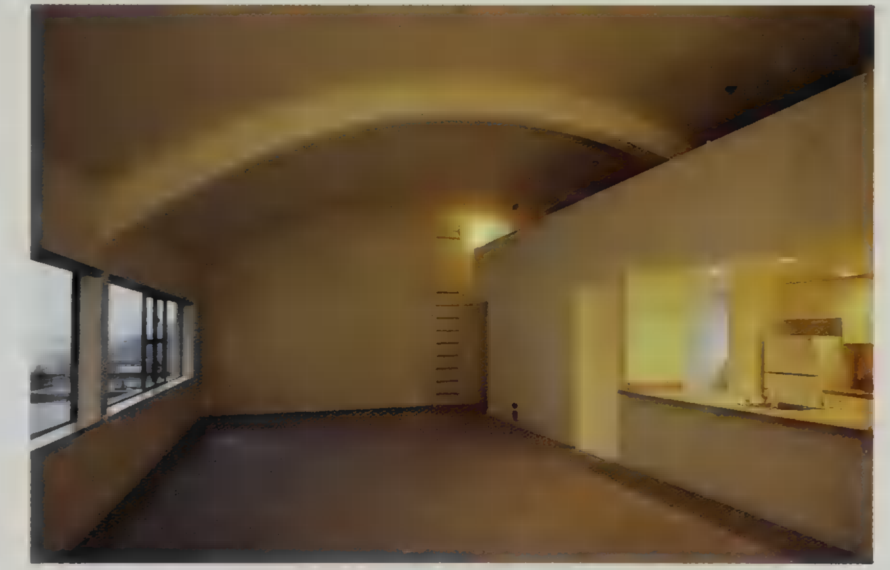
redits
anner Building
eattle, Washington
wner: *Hadley Holdings Corp.*
rchitect: *Weinstein Copeland rchitects—Ed Weinstein, artner-in-charge; Milton Won, roject manager; John ggleston, Robert Nishimori, udith Swain, design team*
Engineers: *Ratti Swenson Perbix (structural); Bush, Roed & Hitchings (civil)*
Landscape Architect: *Harvard & Associates*
General Contractor: *Hadley Holdings Corp.—W.G. Clark, construction manager*

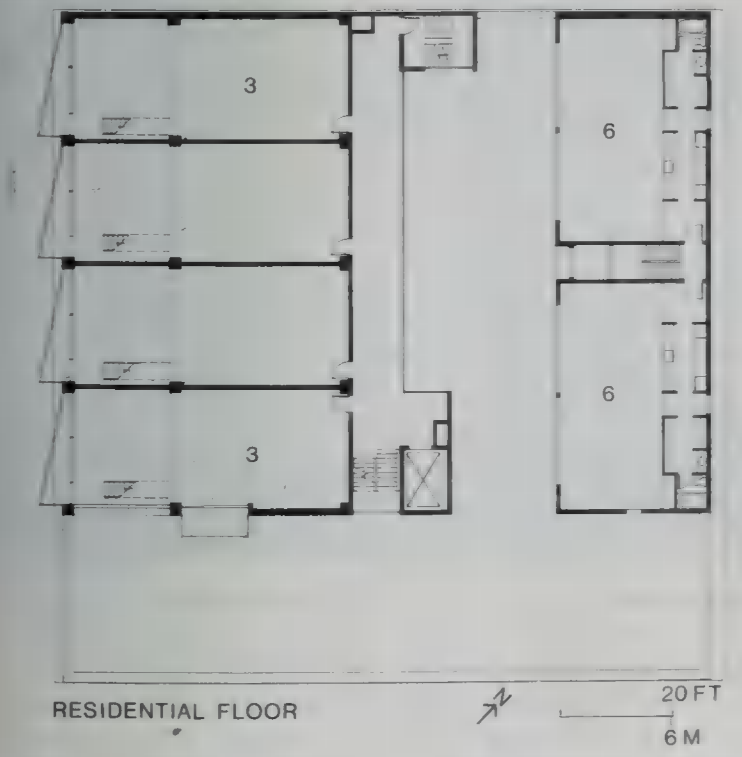


1. Commercial
2. Parking
3. Studio
4. Penthouse
5. Terrace
6. Rental unit

SECTION







RESIDENTIAL FLOOR

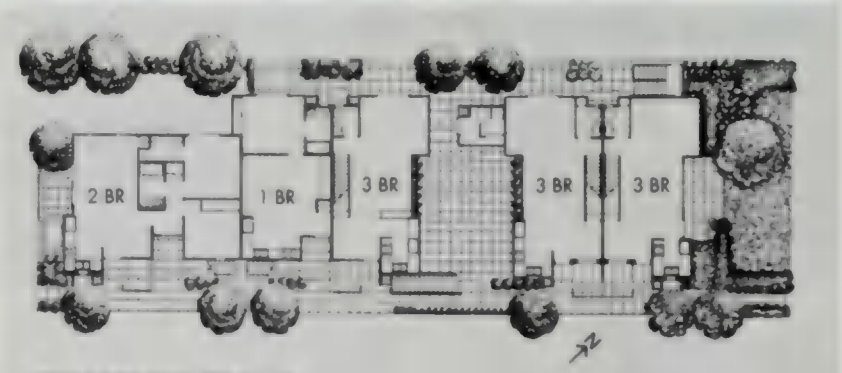
For-sale studios are bought as raw space with concrete floors and sheetrock walls (top). Utilities run through walls at multiple locations to provide flexibility in apartment layouts. Typical units have 1,200 square feet on one level and 600 square feet on a mezzanine. In a rental building, units are finished spaces with either 1,200 square feet (above) or 600 square feet.

Garcia Apartments

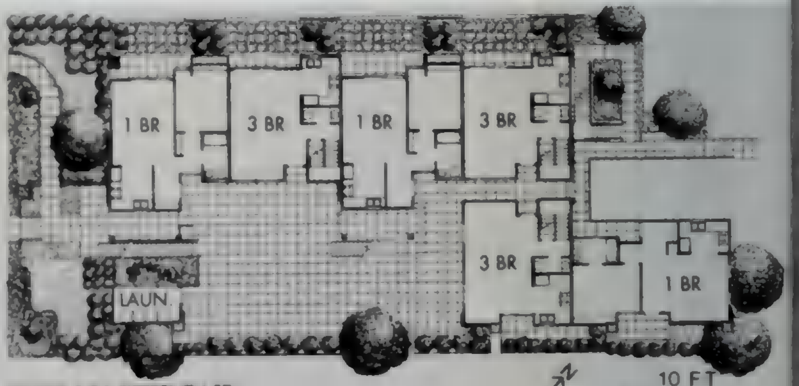
Santa Monica, California
William Adams Architects

A good example of infill housing, the Garcia Apartments provide 30 affordable dwelling units on four separate sites. By respecting the small-scale character of the surrounding neighborhood and limiting each cluster of housing to just seven or nine units, architect William Adams was able to overcome the existing community's "not-in-my-backyard" response. Built for the Community Corporation of Santa Monica, an arm of the local government, the project incurred construction costs of just $66 a square foot—a figure that is impressive considering the underground parking built for each cluster. All of the clusters were built at the same time by the same contractor and used a common kit of parts. Each of them, however, has its own quirky identity and its own way of responding to its immediate

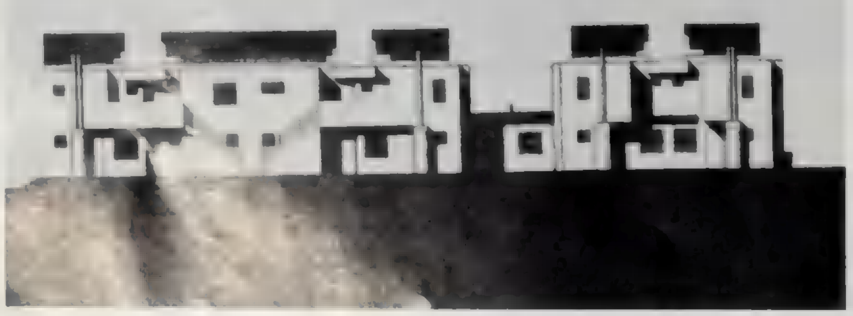
© Douglas Hill photos

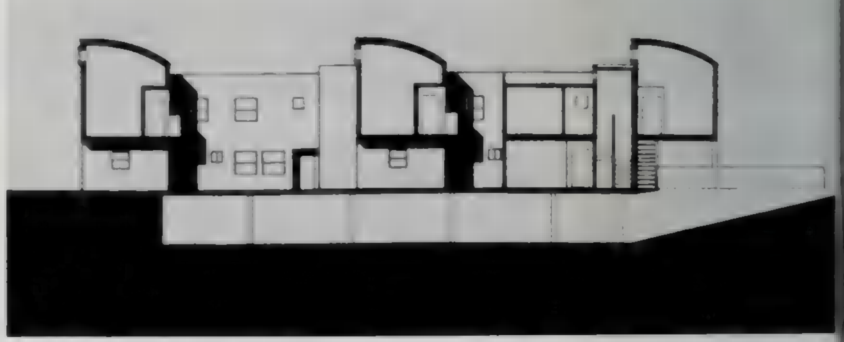


FIRST FLOOR SEVENTEENTH ST.



FIRST FLOOR FIFTEENTH ST.



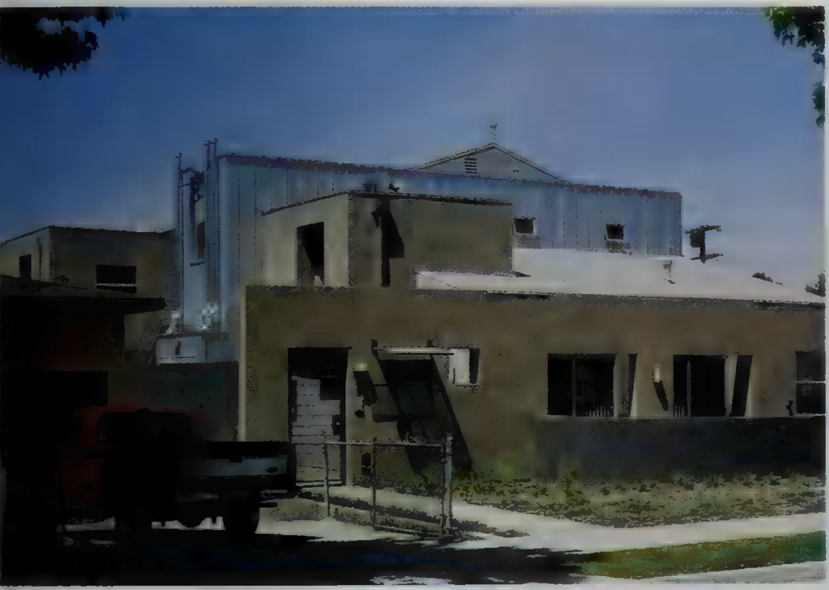


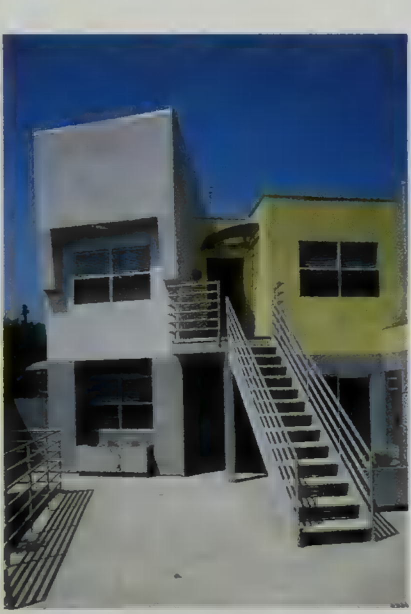
Seventeenth Street. *This project's [illegible] a transition from [illegible] east of the site [illegible] apartment buildings [illegible]. Curved [illegible] make this the most expensive of the four clusters, but also give it a unique identity.*

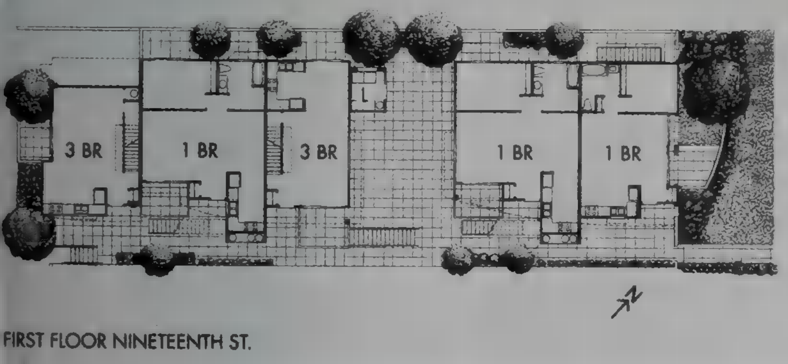
Fifteenth Street. *While the other clusters have seven dwelling units, this one has nine—thereby reducing the cost per square foot. A wider lot here allowed the architect to combine the courtyard with the required side yard, creating a more spacious and successful outdoor gathering place.*

eighbors. Adams' basic scheme as to build one- and two-story ood-frame structures above oncrete parking and organize hem around an open courtyard. ince access to and from the nderground parking is from the ourtyard, it is easy for residents o see who is coming and going. his arrangement helps promote sense of community and securi-. A shared laundry room off the ourtyard also brings residents together. All of the courtyards face south to expose more of the residences to sunlight. By combining one- and two-story structures and using different colors of stucco, Adams reduced the apparent scale of the clusters so they fit in with nearby single-family houses. Although the basic forms of the dwellings are simple and repetitive, each cluster has a few unique features such as curved or raised roofs and metal siding that help imbue it with its own identity. Each cluster has a mix of one-, two-, and three-bedroom units, ranging from 650 square feet for one bedroom apartments to 1,200 for three-bedroom units. Because one-bedroom units are more likely to be rented by elderly people, they are located on-grade and use the legally required side yards as outdoor extensions of living areas. *C.A.P.*

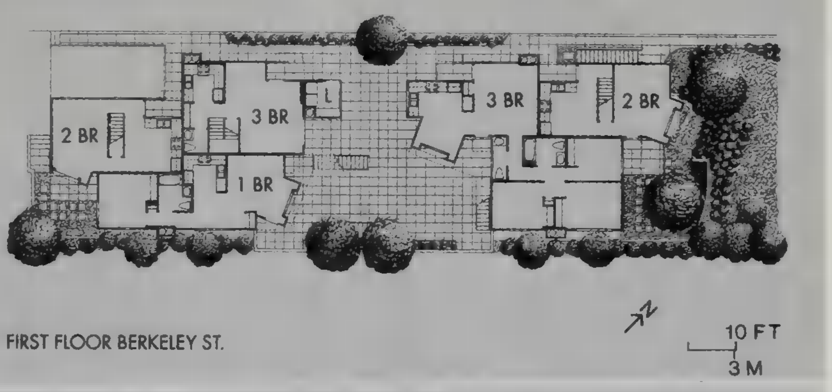
Credits
Architect: *William Adams Architects—William Adams, George Proctor, Eric Odor, designers; Pam Chandler, project architect; John Adams, assistant; Mark Dizon, drawings*
Engineers: *Parker Resnick Structural Engineers*
Landscape Architect: *Raymond Hansen*
General Contractor: *Burns Pacific Construction*



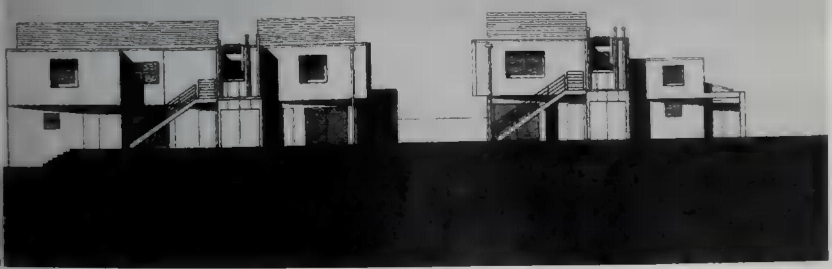


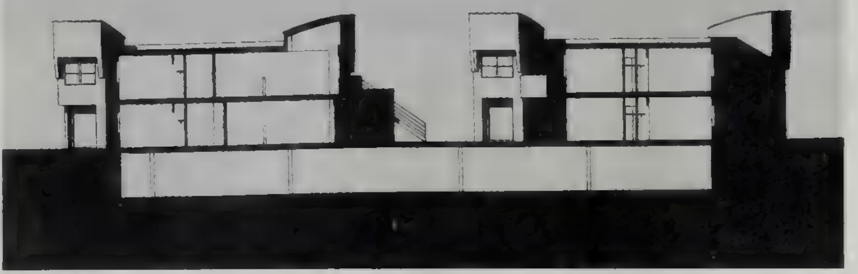


FIRST FLOOR NINETEENTH ST.



FIRST FLOOR BERKELEY ST.





ineteenth Street. *Although he predominant exterior aterials used at all of the lusters are inexpensive ones uch as stucco and paint, the rchitects found that by using more expensive ones (like the galvanized sheet metal here) sparingly, they could add a sense of richness and character to the buildings.*

Berkeley Street. *While the other three clusters of Garcia Apartments are located in the Pico neighborhood, this one is within about a mile of the others. Neighbors' initial fears about the project were overcome by keeping each cluster small and respecting the character of the area.*

Kitsilano Project

Vancouver, British Columbia
Neale Staniszkis Doll Adams Architects

A direct outcome of changing demographics, the Kitsilano Project is a multi-site effort by the Canadian government to build appropriate housing for an aging group of World War II veterans. The project incorporates many of the latest ideas on designing housing for the elderly and included the residents in the decision-making. The project began in 1990 when the federal government decided to redevelop housing it had built in 1946 for returning veterans. The old housing was mostly two-story walk-up apartment buildings designed for young families and was no longer properly serving the needs of the original residents, many of whom still lived i the same units and were now around 70 years old. While guar- anteeing existing residents apartments in the new project, the government, through its

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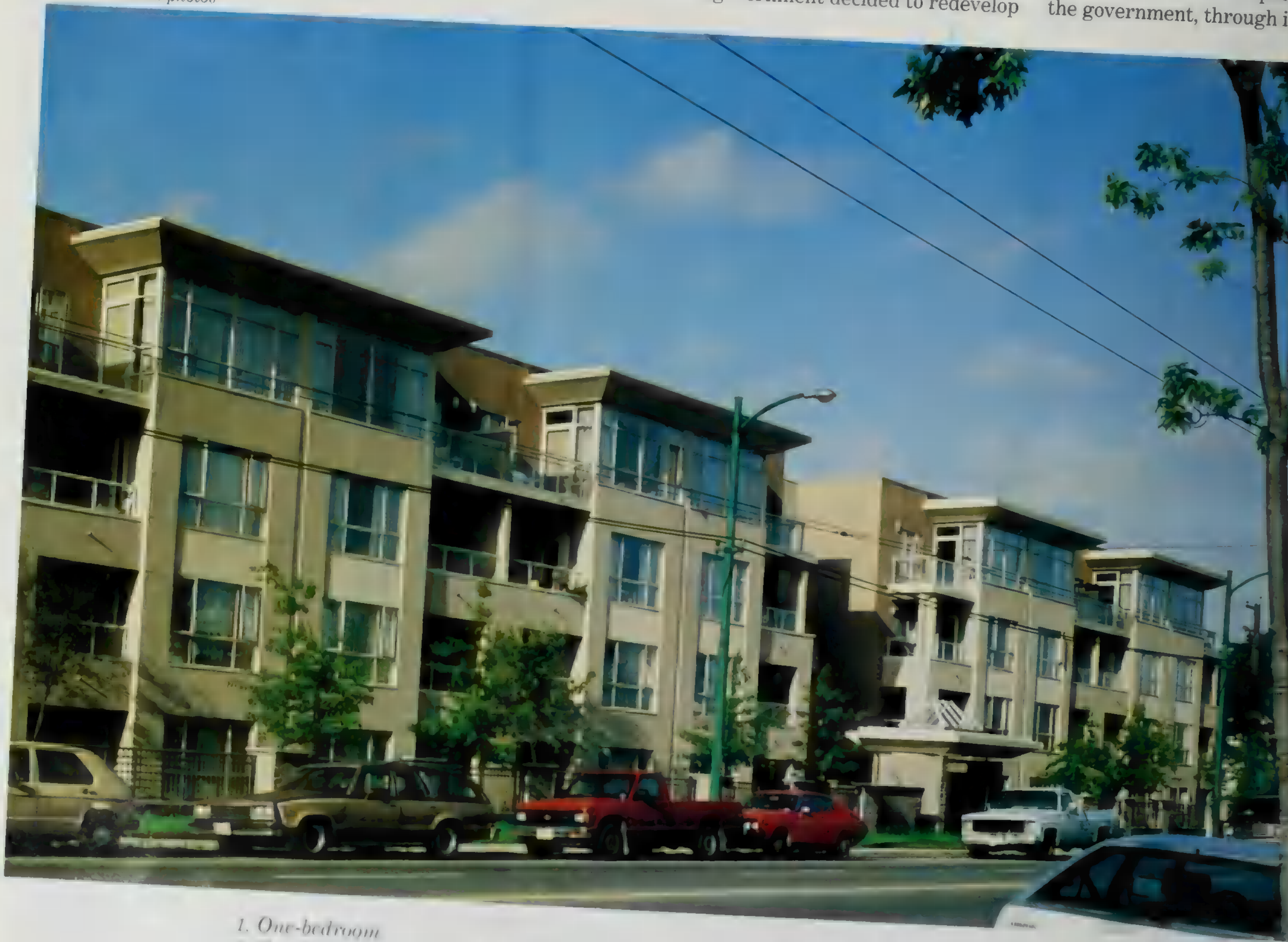
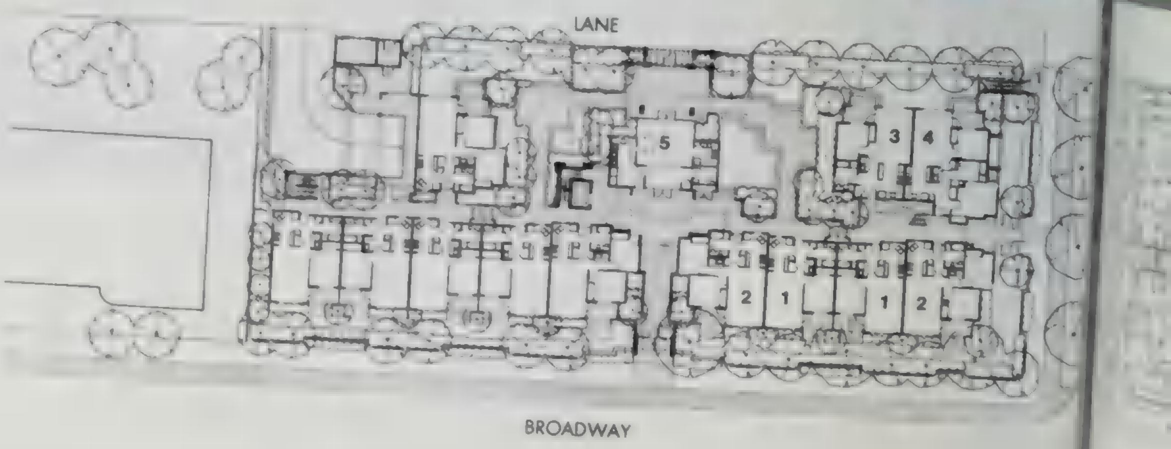
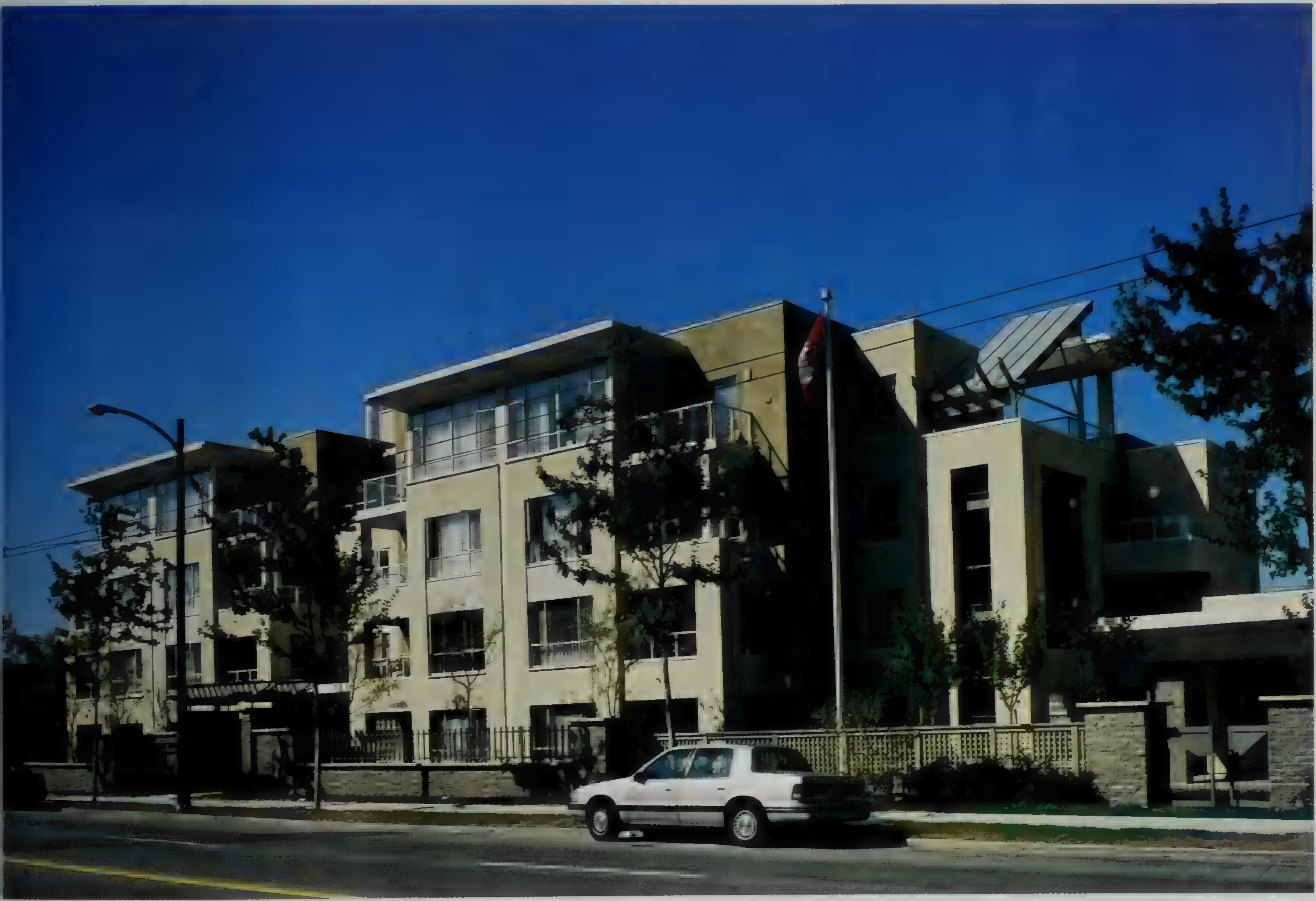


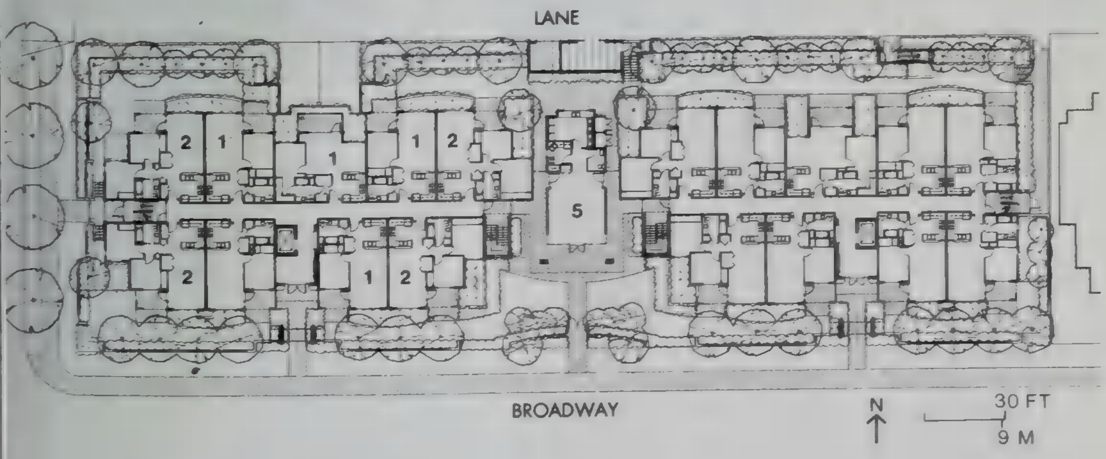


1. One-bedroom
2. Two-bedroom
3. One-bedroom adaptable
4. Two-bedroom adaptable
5. Common facility

anada Mortgage and Housing orporation (CMHC), decided to ·place old buildings on 16 sites ith higher density structures on ·e of those sites; the other 11 tes would be redeveloped as ousing for other groups. Neale ·aniszkis Doll Adams Architects as hired to masterplan the ntire project and design the ·st two buildings. A key concept ehind the design of the build- gs, says Derek Neale, was "aging in place"—creating apartments that adapt to the needs of residents as they get older. As a result, all apartments are free of steps, have flush door sills, and are equipped with grab bars and easy-to-grip hardware. Kitchens and bathrooms can be adapted for wheelchair accessibility. Every effort was made to give the units and buildings the look of conventional housing. The first building is a four-story wood-frame structure with external corridors connecting 29 one-bedroom units, 19 two-bedroom units, and seven units specially equipped for wheelchair access (photo and plan, opposite). Parking for 48 cars is underground. The second building, across the street from the first, has 41 one-bedroom units, 21 two-bedroom units, underground parking for 34 cars, and indoor corridors (below). *C.A.P.*

Credits
Kitsilano Project
Vancouver, British Columbia
Architect: *Neale Staniszkis Doll Adams Architects—Derek Neale, partner-in-charge, Richard Fouchard, David Ooyevaar, project architects*
Engineers: *Steven Lerer Engineering (structural); Caulfield Mechanical Design (mechanical)*
General Contractor: *Barclay Construction*



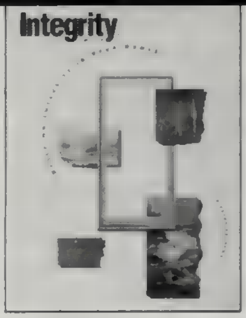


Product Literature/Residential

For more information, circle item numbers on Reader Service Cards.

400. Mortise locks
Arrow heavy-duty locksets meet the security requirements of the New York City Housing Authority as well as other large multifamily owners. A 10-page mortise-lock catalog gives installation details as well as ANSI, Federal, UL, ADA, and other code-compliant locks. Drawings show all functions offered for the one-size-case product. Arrow, Brooklyn, N.Y

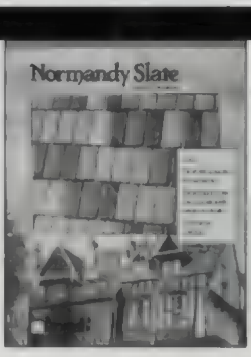
401. Adjustable door frames
An eight-page brochure on prefinished steel-door drywall frames includes finish, fit, and specification information on systems for high-abuse, commercial, residential fire-rated, and multifamily-residential applications. Frames and casings come in stainless steel and polished brass as well as standard poly-coated steel. Timely, Pacoima, Calif.



402. Wood/composite windows
A new line for Marvin, the Integrity window is made with a bi-component structural frame: pine interior and a pultruded-fiberglass composite exterior. Intended for single- and multifamily housing, the low-maintenance windows come in bow, bay, awning, picture, and casement styles. Will not rack or warp. 800/862-7587. Integrity From Marvin, Warroad, Minn. *

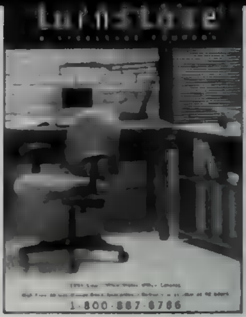
403. Spa-buyers checklist
Brochures and technical bulletins written for both the consumer and the designer highlight the appearance, performance, and long-term maintenance benefits of Lucite XL continuous-cast acrylic sheet, said t capture mold details well when thermoformed. Charts display range of deep spa colors available. ICI Acrylics, Wilmington, Del.

404. Engineered wood guide
A maker of composite joists, headers, beams, and columns explains the Silent Floor: using TJI joists and Micro-Lam and Parallam members, correctly installed floors will not squeak. A 28-page catalog gives span, loading, and bracing data for floor and roof assemblies, design properties, and connections. 800/628-3997. Trus Joist Macmillan, L.P., Boise, Id.



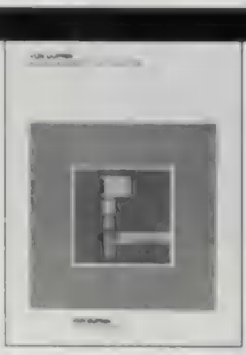
405. Normandy-slate roofing
Monier now offers cementitious slates said to replicate the appearance of the randomly sized smaller tiles used on roofs in northern France. A folder shows many of the subtle color blends and accents available in the incombustible, freeze/thaw-resistant tiles. Trim pieces such as ridges and hips available in matching colors. Monier, Orange, Calif.

406. Textured acrylic finish
A heavy-bodied synthetic stucco, Uni-Tex is said to resist extremes of weather, salt spray, and freeze/thaw cycling. The water-based coating system, for exterior use on plywood, board, and masonry, should cover substrate imperfections and has a 300-percent elongation to resist hairline cracking. Comes in 30 colors. United Coatings, Greenacres, Wash.



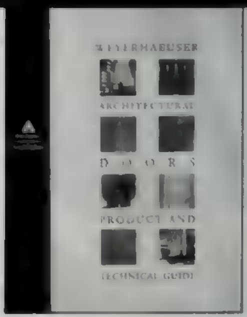
407. Home-office furnishings
Steelcase's new small-business division's catalog starts off with "5 hot products for under $300": adjustabl task seating, computer and conference desks, movable easels. Include 48 pages on economical, ergonomic furniture and accessories specificall for the budget and space needs of th small home office. 800/887-6786. Turnstone, Wyoming, Mich.

408. Wood-look steel entry
[illegible] at the [illegible] steel entry [illegible] that [illegible] and stains [illegible] the [illegible] Perma Door [illegible] face over a [illegible]. Hinges [illegible] ments that [illegible] in the frame. Face [illegible] realistic oak grain patt[illegible] easy-to-stain [illegible] West Branch, Mich.



409. Pilfer-proof exit
Series HS98, a rim-type exit device, meets building security requirements as well as life-safety and fire codes. A four-page brochure explains how the exit integrates with automatic deadbolts, key cylinders, and other types of access-control systems to provide single-motion egress while remaining resistant to attack by burglar tools. Von Duprin, Inc., Indianapolis.

410. Bringing light inside
For both homeowners and architects, a 36-page *Complete Guide to Roof Windows and Skylights* illustrates all Velux products, and shows how to transform attics into living areas, create energy-efficient sunrooms, improve home ventilation, and build a skylight shaft. Details correct flashing for all roof types. 800/283-2831. Velux-America, Greenwood, S.C. *



411. Architectural doors
A new 38-page catalog covers all types of multiple-ply and stile-and-rail entrance and passage doors, wit particleboard, fire-rated mineral, hollow, and acoustical cores. Illustrates veneer species, patterns, finishes, and standard light configur tions. Free spec binder. 800/869-366 Weyerhaeuser, Marshfield, Wis.*

Continued on page 97

* *Product Data* [illegible]

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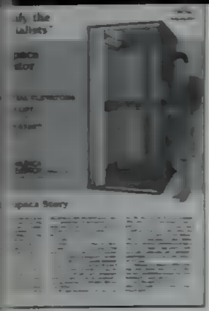

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or and the Custom-Ryde hydraulic
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ted-use requirements of homes.
rches, and clubs. Photos show all
ıdard cab configurations; wheel-
ır widths available. Waupaca
vator Co., Inc., Waupaca. Wis.

413. Structural panel systems
A 60-page design guide stresses the sustainable advantages of North American-grown wood products. Discusses performance standards. appearance and exposure grades, fire resistance, and loading and construction details for APA-rated floors. walls. roofs, and other systems. Excellent diagrams. American Plywood Ass'n., Tacoma, Wash. *

4. Cedar-shingle siding
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les, panels are said to install
idly. Free architectural design kit
ered, 800/426-8970. Shakertown.
ılock, Wash.

415. Aluminum-panel cladding
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6. Apartment locksets
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lage Lock Co., San Francisco.

417. Security door viewer
For hotels as well as multifamily units, a UL-listed viewer lets occupnats see clearly from four angles —straight ahead, below, and up and down the corridor—by rotating the eyepiece. Made of steel with a pyrex lens, it will not compromise the fire rating of door assemblies. Rudolph-Desco Co., Englewood Cliffs, N.J.

Continued on page 99

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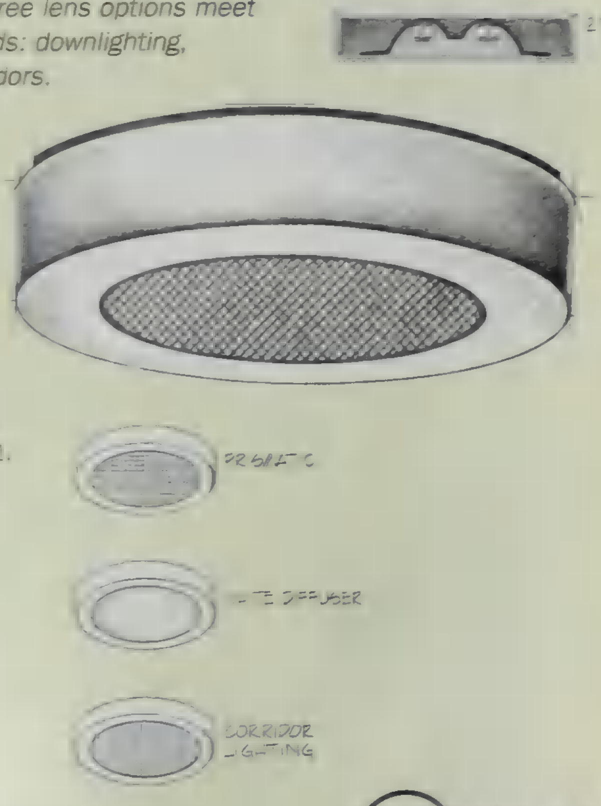

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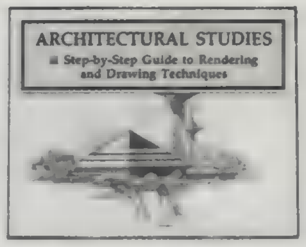

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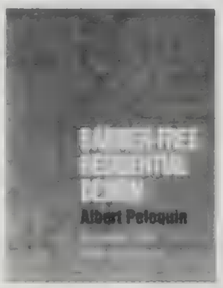

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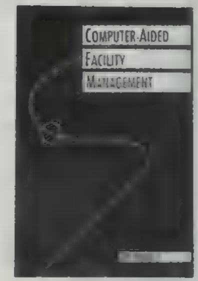

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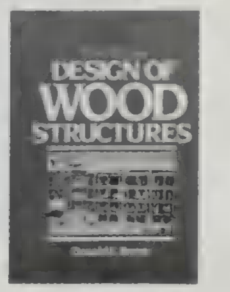

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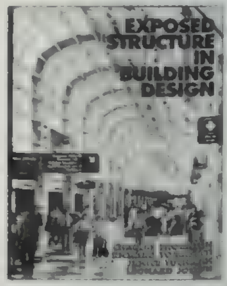

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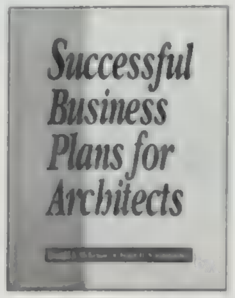

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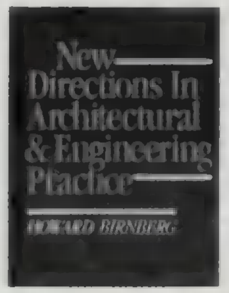

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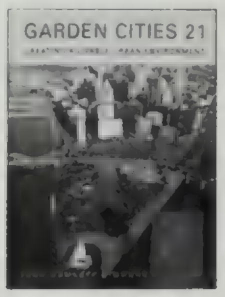

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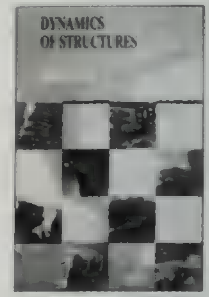

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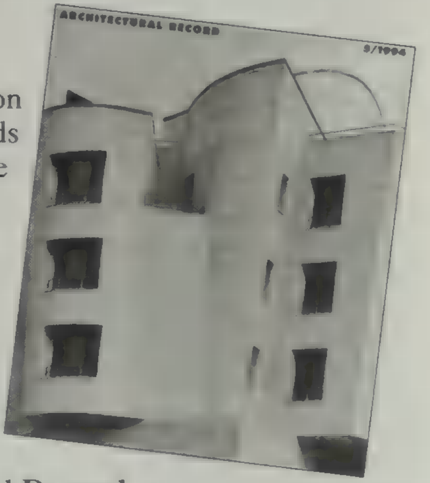

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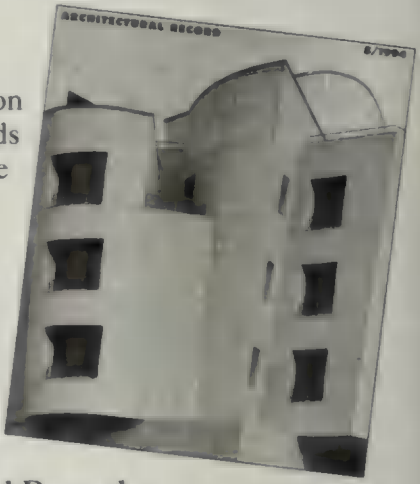

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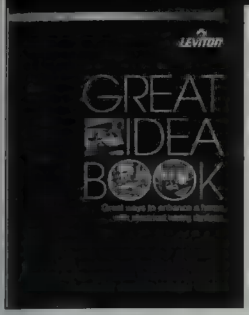
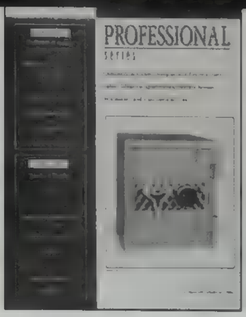
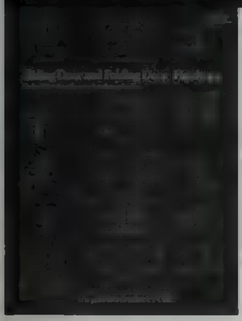
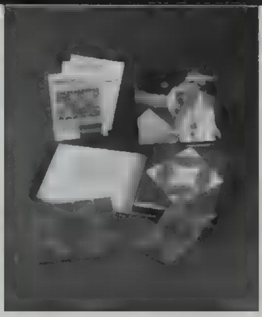




418. Planning for power
A room-by-room guide shows how to select and locate wiring devices—outlet boxes, light switches, phone jacks, occupancy sensors—to get the best use from them in any home. Schematics suggest placement ideas that add comfort, convenience, and security, while still meeting code requirements. Fax requests: 800/832-9538. Leviton Mfg. Co., Little Neck, N.Y.

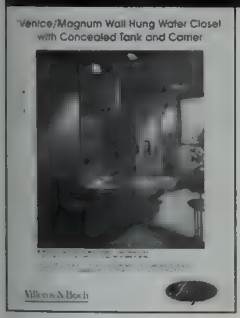
419. Residential jewelry safes
A smaller version of burglar-resistant vaults found in diamond-dealers' offices or banks, Empire safes are designed to fit into closets or alcoves, or under desks—easily accessible, but too heavy (over 200 lbs) to just cart away. Digital-keypad locking. Some offer fire protection. *Safe at Home* booklet gives selection tips. Empire Safe Co., Inc., New York City.





420. Special-door hardware
A four-page brochure demonstrates how specialized track, hangers, and other fittings work on folding doors, sliders, room dividers, pocket doors, and shutters in residential applications. Product choices include hinges and pocket doors that "widen" doorways enough for wheelchair passage. 800/837-5664. L.E. Johnson Products, Inc., Elkhart, Ind.

421. Custom-tile sampler
New specification kits offer hands-on samples of three custom-cut ceramic-tile lines: Crossquilt, replicating patchwork in porcelain; Crosstyle fit-together geometric shapes; and examples of water-jet programs that reproduce almost any custom design in ceramic-tile increments as small as 2- by 2-in. Crossville Ceramics, Crossville, Tenn.


Venice/Magnum Wall Hung Water Closet with Concealed Tank and Carrier
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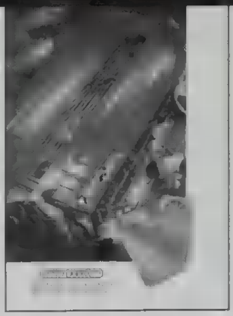

422. Wall-hung water closet
A brochure on the Venice/Magnum water closet (a Villeroy & Boch bowl with U.S.-made flush mechanisms) explains how the 1.5 gpf unit saves floor space, meets code with a 1/2-in. water supply and 3-in. outlet, and offers easy access for maintenance. ADA-compliant. 800/837-0092. Burgess Int'l., Romulus, Mich.

423. Douglas-fir doors
A color catalog illustrates all styles of Bend doors, including exterior designs with decorative-glass lights and transoms, carved panel and French doors, and eight different panel configurations for interior applications. Gives full design and specification data. 800/877-9482. Jeld-Wen, Klamath Falls, Ore.

Continued on page 101

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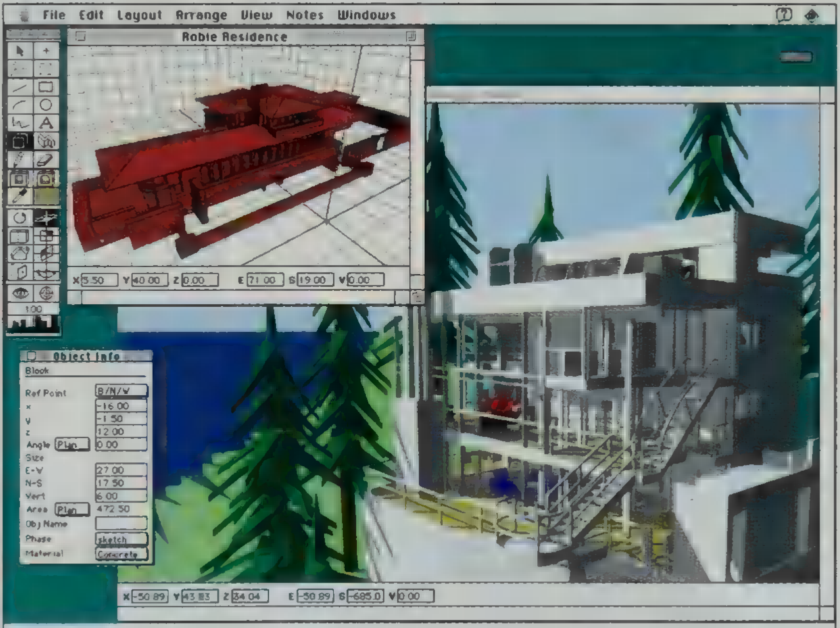

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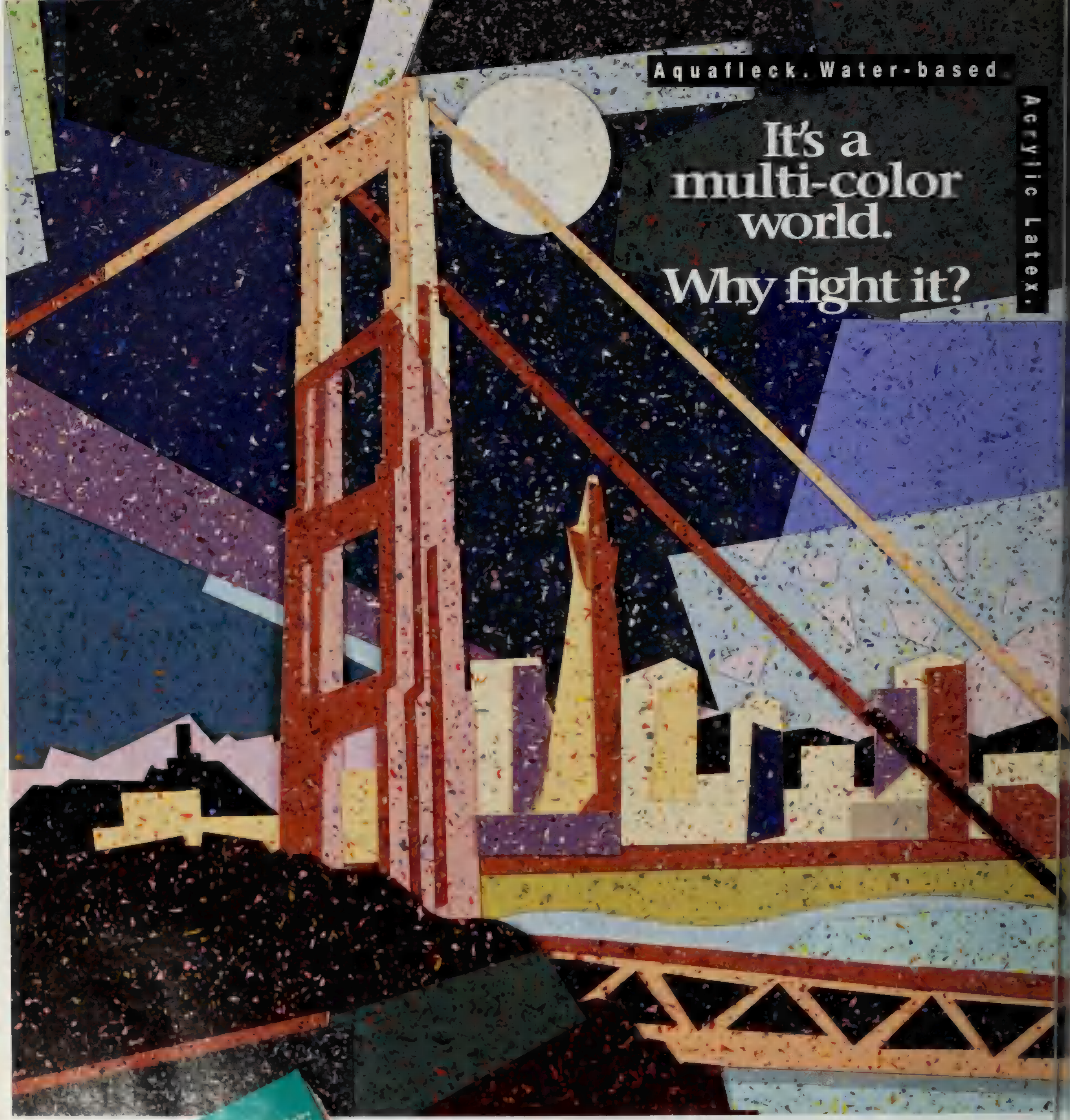
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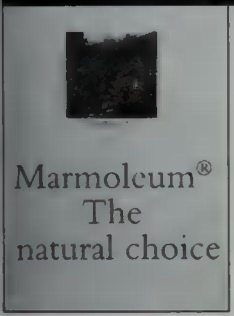
Product Literature/Residential

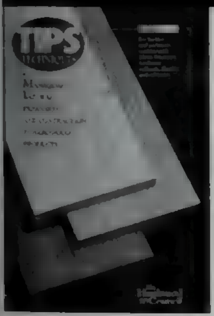
424. Hurricane-resistant glazing
An architectural guide explains how wind-generated positive and negative pressures damage structures, and explains new wind and impact codes designed to prevent rapid depressurization from broken windows. Describes SentryGlas composite and Butacite laminated glass as passive, economical, and unobtrusive protection. DuPont Co., Wilmington, Del.

425. Compact no-vent fireplace
A new model hearth is described as ideal for apartments because of its lower BTU output and a small chassis that needs less that 4 sq ft of floor space and projects only 15 in. into a room. Standard features include log set, mesh firescreen, and a built-in oxygen-depletion sensor. Meets ADA specs. TEMCO Fireplace Products, Nashville, Tenn.

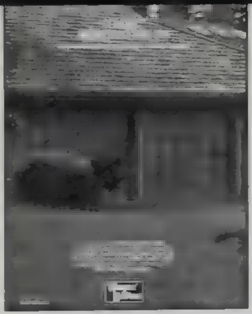


426. Back to linoleum
Made with linseed oil, pine resin, wood flour, and cork, easy-to-inlay Marmoleum linoleum floorcovering is said to be biodegradable and environmentally benign. A catalog includes product and installation photos, illustrations of the 68 available colors, and outlines the low-maintenance procedures required. Forbo Industries, Hazleton, Pa.

427. Limestone surrounds
A British source of Bath and Cotswold stone offers fireplace mantles and surrounds carved in styles that range from simple to ornate styles, with prices in the area of $2,000 for standard designs. A brochure gives typical dimensions, plans, and elevations. Farmington Stone Ltd., Cheltenham, U.K.



428. How to design hardwood
An eight-page folder, *Managing Natural Contraction and Expansion in Hardwood Products*, is the first issue of Tips & Techniques, a new series of technical brochures published to help the architect and residential builder work better with wood. Illustrates the best way to lay a wood floor on a concrete slab. The Hardwood Council, Oakmont, Pa.



429. Garage door systems
Individual catalog inserts describe the available size and panel-design options offered by a line of four- and five-section wood and steel residential garage doors. Vision lights and insulated security windows may be specified on both raised-panel and flush-style doors. Panel configurations may be customized. Wayne-Dalton Corp., Mt. Hope, Ohio. ■

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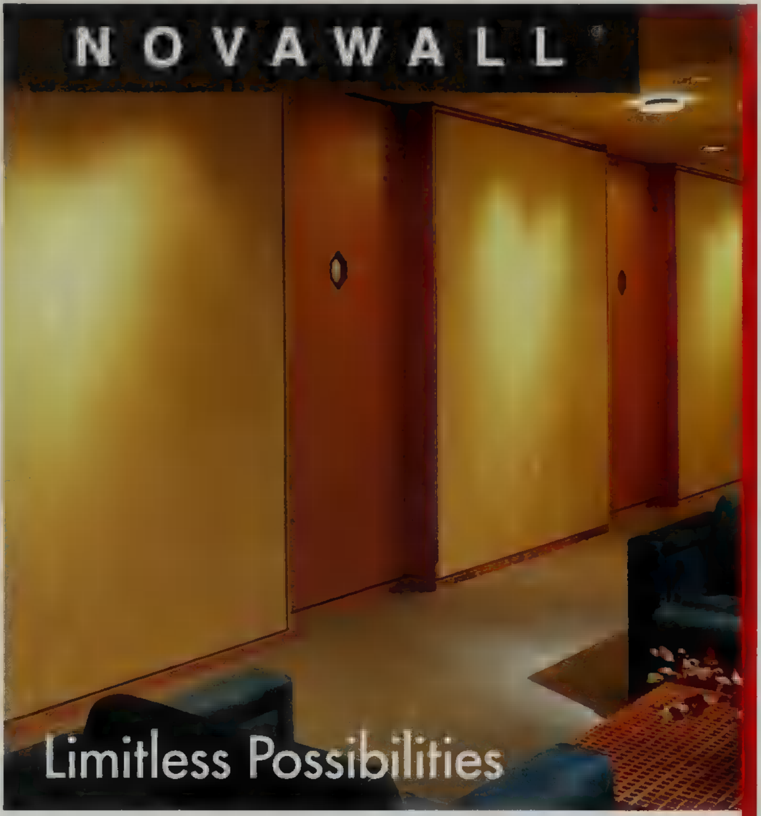

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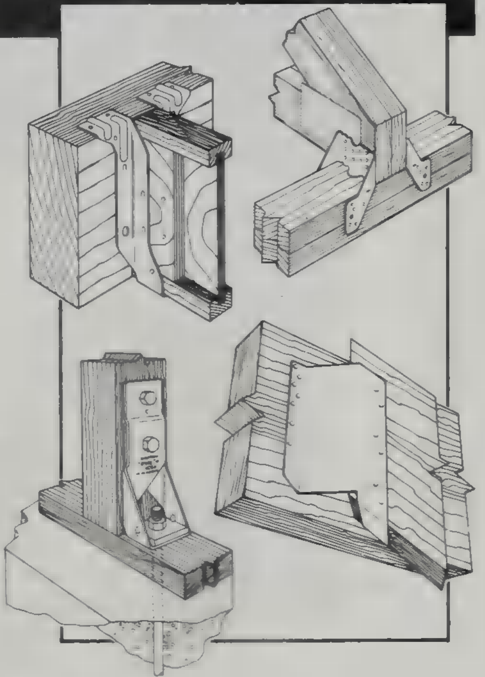

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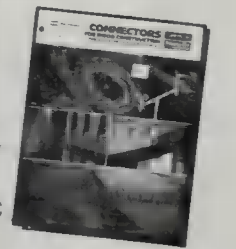

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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.

Pages 56-63

Bank of Luxembourg
Arquitectonica International Corporation, Architect
Bureau d'Architecture F. Cavallini, Associated Architects
Cladding and interior stone: Zimbabwe black granite, Lanhelin gray granite, Chassagne stone: Jacquemart & Trigatti. Curtain wall and aluminum-framed windows: fabricated by Gartner. Amber and green-tinted glazing: Vegla. Gray glass: Fabulor. Glass and stainless-steel entrance: Metallerie Pierre Croisean. Wood doors, reception furniture: B&B Italia. Desks: Unifor (designed by Jean-Michel Wilmotte). Roofing slate: Toiture Du Nord. Ceramic-tile flooring: FloorGres (Avorio Stone). Security cameras: Vicon. Elliptical lift: Verbano. Elevators: Ceneral Technic Otis (Europa 2000). Lighting: Zumtobel; Erco; Mazda; BEGA; Leucos.

Pages 64-69

Canadian Clay and Glass Gallery
Waterloo, Ontario, Canada
Patkau Architects
Brick: Canada Brick. Metal cladding: Alcan. Membrane roofing: Prospex Roofing. Insulation board: Dow Chemical Co. Windows: Truelite Industries. Skylights: Architectural Plastics Ltd. Wood windows and doors: Honsberger Lumber, Inc. Tile: Olympia. Lighting: Metalumen. Elevators: Dover Elevators.

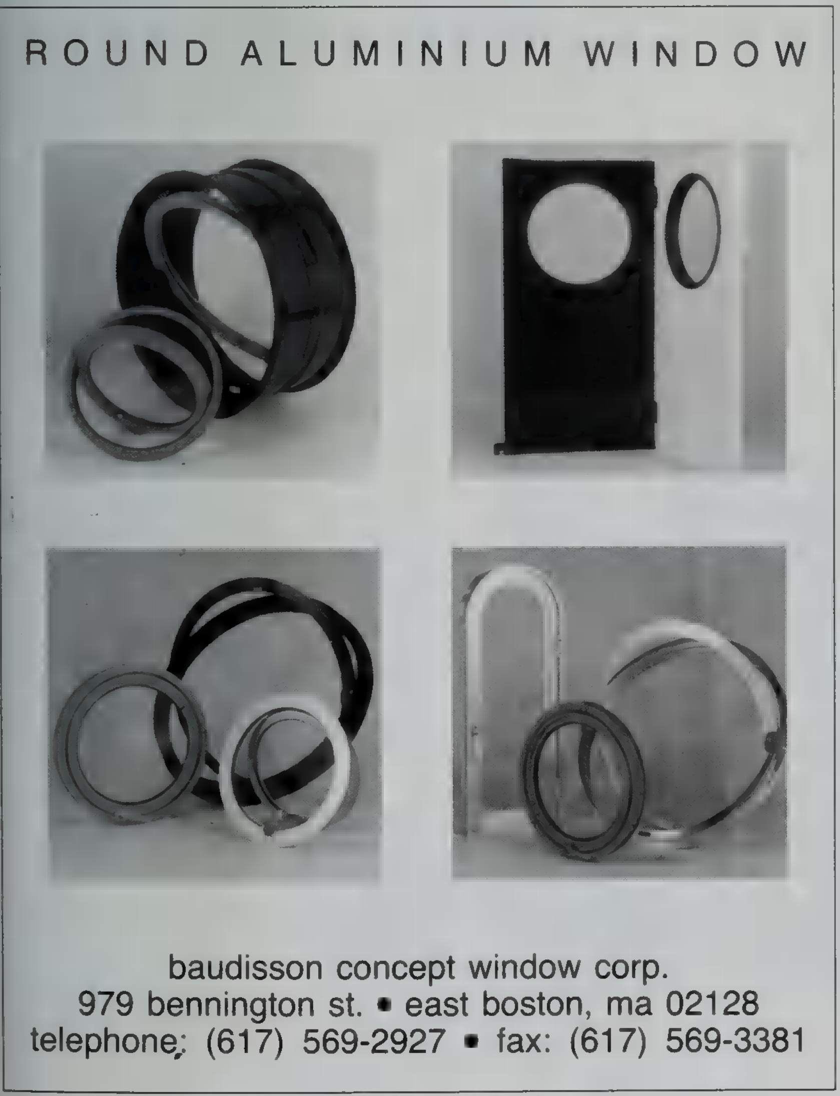
Pages 70-77

Central Administration and Junior School Building, Museum of Fine Arts, Houston
Carlos Jimenez Architecture Studio, Architect
Cladding: Indiana Limestone. Weatherproofing sealant: G. E. Silicone. Natural-anodized corrugated aluminum curtain wall: Honea Sheet Metal, Inc. Pre-weathered standing-seam Galvalume roof: Architectural Building Components. Circular grille: Louvers & Dampers, Inc. Glass block: Pittsburgh-Corning Corp. Low-E glazing: Libbey-Owens-Ford. Entrances and windows: Kawneer Co., Inc. Bollards: McGraw-Edison. Metal-halide uplights: Prescolite. Paints: Devoe & Raynolds. Elevator: Schlinder Elevator. Granite pavers: reclaimed from site. Interior sun-control blinds: Levelor. Stair railings: Julius Blum; installation by Berger Ironwork.

Pages 78-83

O'Neil Cinemas, Duluth, Georgia
Richard Rauh & Associates/Architects
Corrugated-steel panel cladding and galvanized-steel vaulted ceiling: McElroy Metals, Inc. Flattened-steel mesh: McNichols Co. Storefronts and entrances: Kawneer Co., Inc. Formed-aluminum fascia: Greba Metal Products, Inc. Custom-formed corrugated gutter: fabricated by Curveline, Inc. Translucent FRP sheets: Lasco Panel Products, Inc. Rolling grilles: Cornell. Interlocking concrete pavers: Paver Systems, Inc. Steel windows: AmWeld. Glass: PPG Industries, Glass Group. Door hardware: Sargent, Div. of KIDDE, Inc. Gasketing: National Guard Products. Acoustic ceilings: USG Corp. Special wall finish: Zolatone Process, Inc. Pile wallcoverings: General Felt Industries, Inc. Adhesive: Laticrete Int'l. Carpeting: Mohawk Commercial. Downlighting: Lithonia. Fluorescent signlighters: Nulite. Strip lighting: Litelab. CFL fixtures: Norbert Belfer. Low-

continued on page 107



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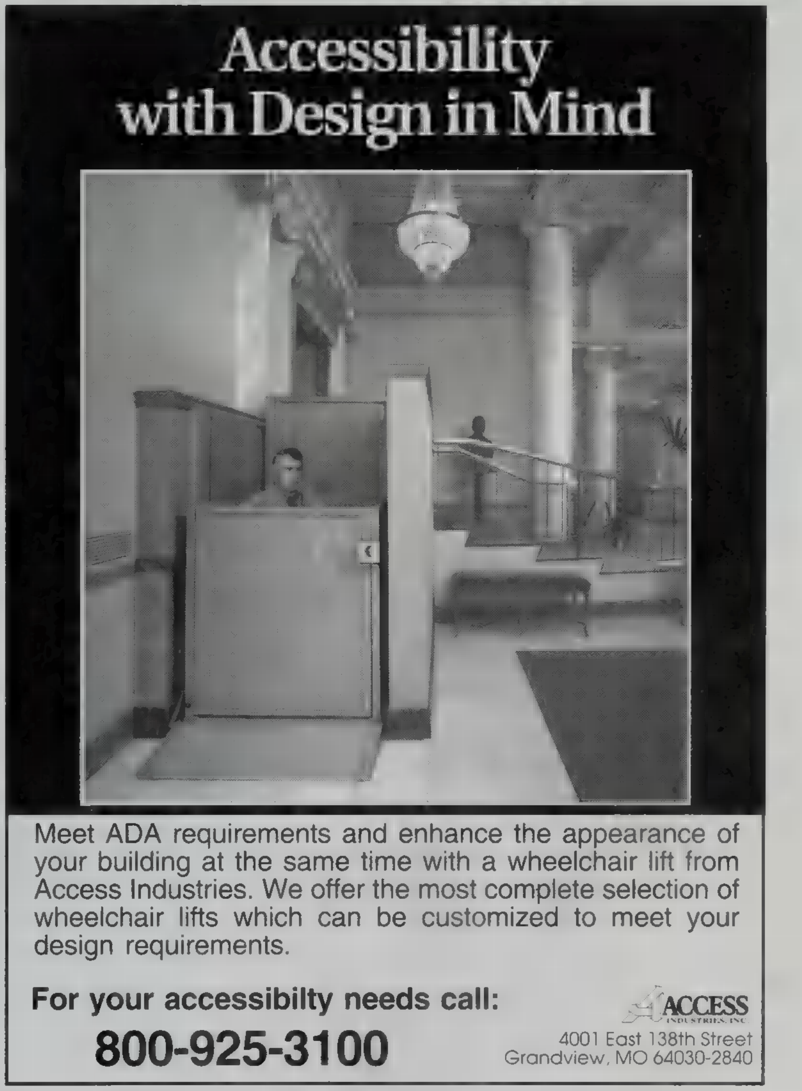

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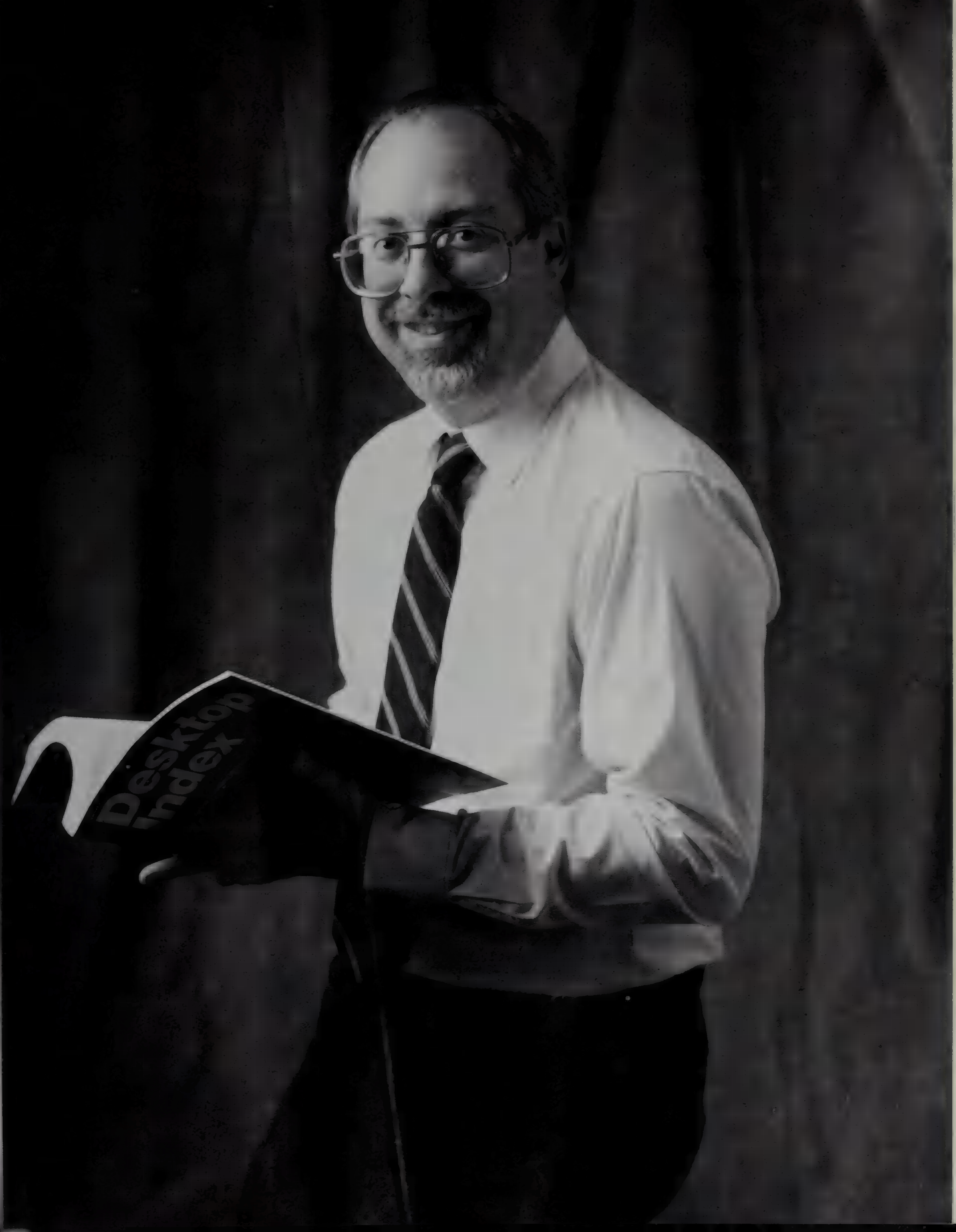
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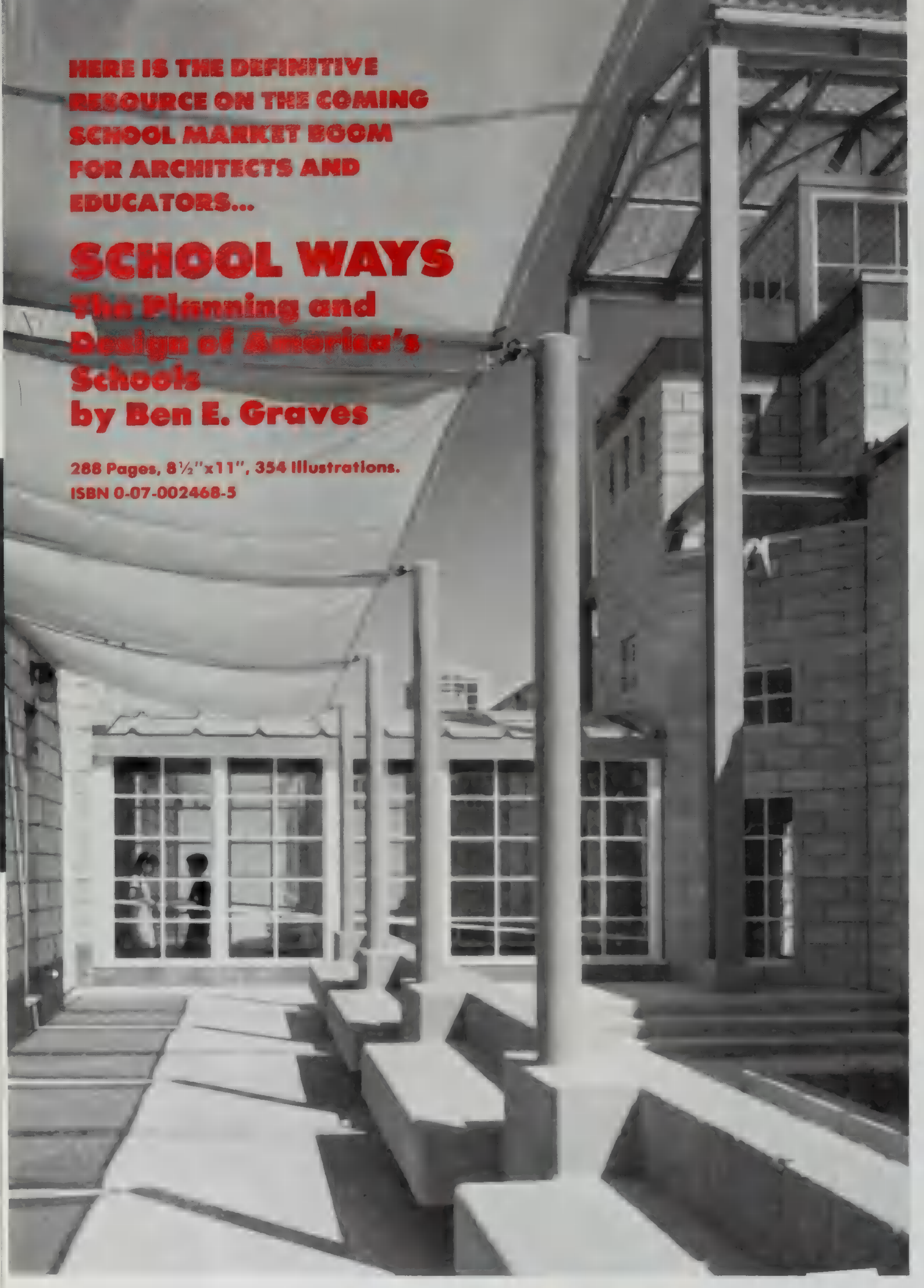

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Manufacturer Sources
continued from page 103

voltage exterior lighting: BEGA. Uplighting: Hydrel. Incandescent flood lights: WF Harris Lighting. Neon accents: Goble Signs.

Pages 86-89
The Banner Building, Seattle, Washington
Weinstein Copeland Architects
Curtain wall and entrances: Phoenix Glass, Inc. Wood joists: TrusJoist-MacMillan. Metal siding: ASC Pacific (Mini-V-Beam). Built-up roof: Firestone (APP 160). Liquid-applied roofing: Neogard. Metal roofing: Berridge Mfg. Co. Windows: Columbia Aluminum Products. Sliders: Sunview. Garage doors: Atlas. Locksets and exits: Precision Hardware, Inc. Elevator: Dover. Lighting fixtures: Lithonia; Progress; Gotham; Caribbean; Perimaliter; Ceilingway.

Pages 90-91
Garcia Apartments, Santa Monica, California
William Adams Architects
Exterior stucco: Omega Products Corp. Colorant: Ameritone. Metal roofing and siding: Bethlehem Steel Co. (Galvalume). Aluminum-framed sliding windows: Milgard. Locksets: Schlage Lock Co. Entrance lighting: Hubbel (NRG 806). Landscape fixtures: Dabbco.

Pages 92-93
The Kitsilano Project, Vancouver
British Columbia, Canada
Neale Staniszkis Doll Adams, Architect
Modified-bitumen roofing: Soprema, Inc. Steel-framed glass roof: custom by architects, fabricated by Barclay Construction Ltd. Metal-faced plywood cladding: Weyerhaeuser Co. (Panel 15). Acrylic-stucco finish: Dryvit Systems, Inc. Laminated glass (balcony rail): Tempa Glass. Split-face block: Lafarge. Exterior doors: Decor. Windows: National Aluminum Products. ■

Corrections

- Primary architects involved in the Roosevelt Island Octagon Tower restoration [RECORD, November 1994, page 12] are: Tanner Leddy Maytum Stacy Architects and Margaret Helfand Architects in association.
- The credits for the Department of Ecology Headquarters [RECORD, October 1994, pages 96-101] should have included the Berger Partnership as landscape consultant, and Gensler and Associates as responsible for interior conceptual planning.
- The credits for the San Francisco Museum of Modern Art [RECORD, November 1994, pages 74-83] should have noted that S. Leonard Auerbach & Associates was the theater consultant. Leonard D. Auerback was not the acoustical engineer.
- Alert reader Tom Hans corrected an error in the October RECORD. On page 23, we cited Susana Torre as the first architect to head Cranbrook since Eliel Saarinen. In fact, Glenn A. Paulsen, FAIA, served as both President of the Cranbrook Academy of Art and as architecture faculty member from 1966 to 1970. A well-known architect in private practice in the Detroit area, he was a student of Louis Kahn at the University of Pennsylvania, and worked on the American Embassy in London as a Senior Designer with Saarinen's Bloomfield Hills firm. ■

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POSITIONS VACANT

Coordinator of Architectural Computing University of Tennessee: The School of Architecture in the College of Architecture and Planning invites applications for a Coordinator of Architectural Computing. Applicants must have a background in architecture and/or computer science, with an emphasis on computer design graphics. Applications and/or nominations are due February 2, 1995, but will be accepted until the position is filled. For a complete job description and submission requirements contact Dr. Scott A. Kinzy, Chair of the Computer Search Committee; University of Tennessee, School of Archicture, 1715 Volunteer Boulevard, Knoxville, Tennessee 37996-2400. The School of Architecture seeks diversity and encourages women and members of minority groups to apply. UTK is an EEO/AATitle IX/Section 504/ADA Employer.

Project Team Leader (Design Job Captain and Project Captain) for architectural firm in Columbus, Ohio, who will coordinate and direct architectural activities regarding construction of hospital projects including coordination with associate architects in Taiwan as well as directing the activities of mechanical, electrical, and plumbing engineers. Act as team coordinator to insure appropriate workflow and design process. Insures that Taiwanese associate firm complies with design intent of architect's drawings. Direct the activities of project assistants relating to schematic design and architectural design development, including work drawing using Autocad to perform all work. Requires Master's degree in Architecture. Also requires one year experience in the job described or one experience as a Designer, Architectural firm. If experience in related field, entire experience must be related to construction of hospital or medical facilities using Autocad to perform all work. Must be able to write Chinese. 40hrs/wk, 8am-5pm Mon-Fri; $32,105.25/yr. Must have proof of legal authority to work indefinitely in U.S. Send resume in duplicate (no calls) to J. Davies, Job #00603, Ohio Bureau of Employment Services, PO Box 1618, Columbus, OH 43216.

Mature Non-Smoking Architect-designer to be a working principal in small design oriented New York City architectural firm. Send cover letter & resume to New York architectural firm. Send cover letter & resume to [illegible]518, AR.

Architect/Project Manager -U.S. District court, Hammond, Indiana. This is a three-year, temporary position to coordinate the design phase of a new federal courthouse to be located in Hammond, Indiana (located 20 minutes from downtown Chicago). Requirements: related bachelor's degree and current license, three years of technical experience, six years of project management experience. Salary: $50,479-[illegible], plus Paid vacation and sick leave, federal retirement program, and health benefits. Obtain job information and application by calling the United States Court at (219) 236-8718. Closing date 2/3/95. EOE

Front page of the Wall Street Journal March 3, 1994, and National Public Radio, "All Thing Considered", July 18, 1994 recognize Tupelo, Mississippi's strong economic growth and excellent quality of life. Opportunities exist in this friendly Southern community to join an established progressive firm expanding to meet this growth by offering both Architectural & Design/Build services. The following positions are available for innovative team players with solid experience in healthcare/commercial/industrial projects: Project Architect: Knowledgeable & aggressive mid-level architect with 3-7 years experience to be responsible for design development/CADD production. Must possess good judgment in dealing with design & client issues. Job Captain: Senior architectural draftsperson with in-depth knowledge of building technology, architectural detailing & CADD production. Good knowledge of computer hardware & software systems is highly desirable. Production Staff: Highly motivated CADD operator/intern architect with 2-5 years architectural production experience. Contact: Barbara Basinger, McCarty Architects, 533 West Main Street, Tupelo, Ms 38801, Phone 601-844-4400, Fax 601-844-0500.

FACULTY POSITIONS VACANT

The University of Georgia. The School of Art seeks applications for a full-time, tenure-track, nine-month appointment a the rank of assistant professor commencing September 1995. Teach undergraduate and graduate courses in Fider-accredited interior design program offering BFA, MFA. Participate in advising and committee service. Demonstrate sustained professional activity. Subject matter competencies should include knowledge of CAD and emphasis in all aspects of non-residential designing. Interior design faculty of four within School of Art with more than fifty full-time faculty. University located 65 miles NW of Atlanta. Qualifications include Master's degree in interior design or architecture; NCIDQ or equivalent; teaching experience at the foundations to graduate levels desirable. Salary and benefits competitive. Send letter of application, curriculum vitae, transcripts, slides (including student work if available) in viewing sheets, and names, addresses, and phone numbers of four professional references to Interior Design Search, School of Art, The University of Georgia, Athens, GA 30602-4102. Tel:706/542-1511; FAX 706/542-0226. Deadline is February 1, 1995 or until position is filled. The University of Georgia is an Affirmative Action /Equal Opportunity institution.

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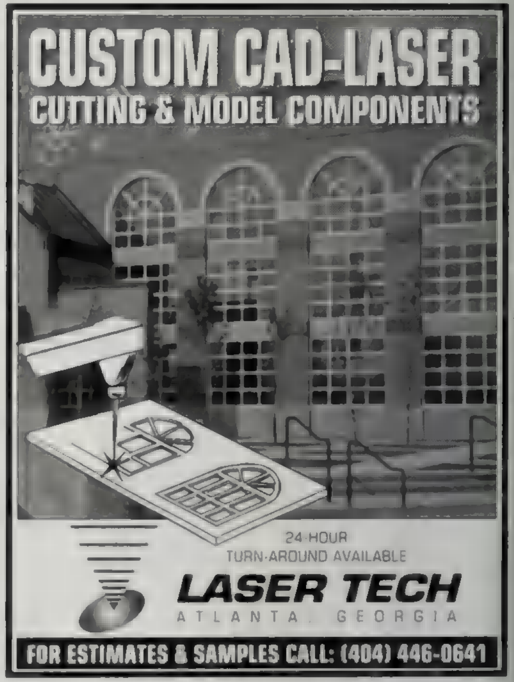
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Atlas Door Corporation's Thermal insulated slat is pressure injected with environmentally safe, polyurethane foam that expands and cures to prevent gaps and voids. Two full steel skins (standard) provide a complete thermal barrier over the slat's surface with no metal-to-metal contact. Slats are available in aluminum, galvanized, prime, and stainless steel. R=6.25. **Call 800-959-9559.**

Atlas Door Corporation

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Adjustable Fixture Co.

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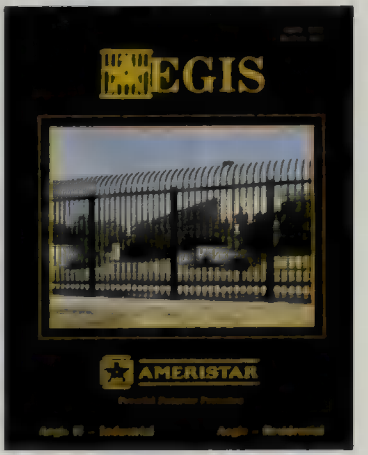

Aegis ornamental fence systems feature strong Forerunner™ rails, internal retaining rods, & specially designed panel brackets. Aegis II industrial ornamental fence offers the strongest security ornamental fence available in todays market. Aegis holds the distinction of having its fence systems specified by more architects & builders than any other in the market. Both industrial & residential brochures are available upon request & include data on structure, design, & options available. Panel design is a component system for easy shipping. For additional information & a free 8-page brochure , call (800) 321-8724 P.O. Box 581000, Tulsa, OK 74158-1000 Fax# (918) 835-0899

AMERISTAR®

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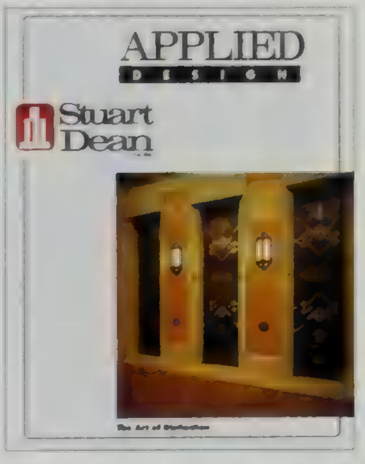
Applied Design by Stuart Dean



When a new architectural design technique is impressive enough to be used by firms like Pei, Cobb, Freed & Partners and Frank Williams and Associates, at only half the price of etching, it catches everyone's attention. Stuart-Dean's Applied Design is a versatile method for decorating and refinishing elevator doors, metal, wood or glass. It can often be applied on site, overnight. You can choose stock patterns or custom artwork. 1-800-322-3180.

Stuart Dean

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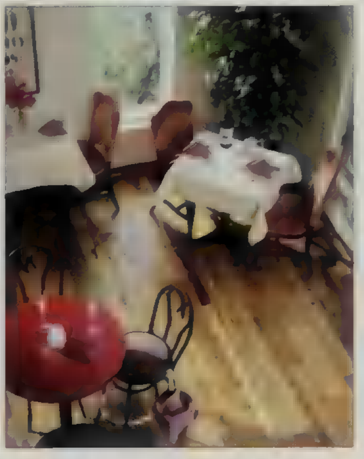
Antique Plank Flooring from recycled barnwood



Our planks are naturally Distressed by Mother Nature, Aged by Father Time™ and can be used for flooring, panelling or millwork. From old barnwood emerges a pricision-milled plank that retains the patina and character imparted by decades of wind , rain and sun, and the signs of old-time craftsman. Free brochure.

Aged Woods®

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Ancor Granite Tile

Ancor produces over fifty No. American and imported granites in a full range of colors and finishes for residential, commercial and institutional use. Standard format is 12 x 12 x 3/8"; other sizes up to 18 x 18 x 1/2" available.
honed finish tile is particularly suitable for high traffic commercial areas. 435 Port Royal West, Montreal, Quebec, H3L2C3, Canada. Ph# (514) 385-9366. Fax# (514) 382-3533.

Ancor Granite Tile

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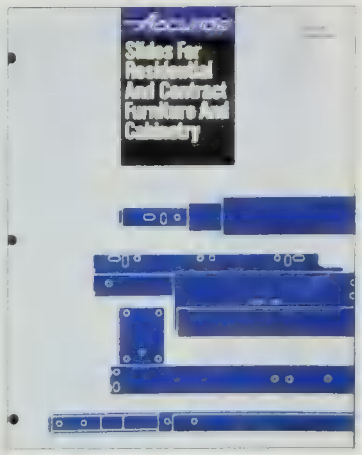
Manufacturers' Spotlight

Enhance the Quality of Casework



Accuride offers a variety of superior slides - perfect for residential, kitchen and office drawers. Accuride slides glide with a fluid motion so silent, they redefine the concept of drawer suspensions. Accuride's catalog - "Slides for Residential & Contract Furniture & Cabinetry" features our new heavy-duty, incredibly stable TV Swivel. For more information: (310) 903-0200.

Accuride

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Interior Systems LaCrosse

***Arkid* tecture Funscapes** is the newest addition to **Interiors Systems' Signature Series**. The *Arkid* tecture collection uses a unique computerized cutting system to produce standard and custom acoustical ceiling tile designs for schools, children's clinics, hospitals, daycare centers, retail stores. Use single or multiple panels with any design, logo, or color. Call 1-800-782-0070.

Interior Systems

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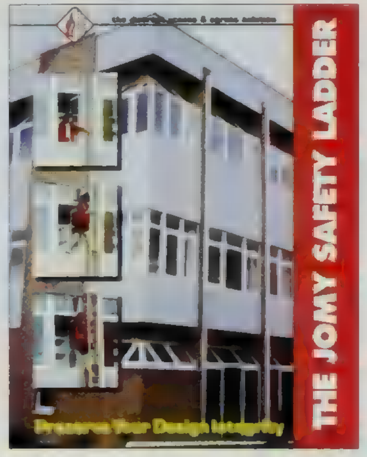
The Discrete Access & Egress Solution



Security requirements, space constraints and aesthetic considerations are a few of the problem-solving applications for the JOMY Safety Ladder. The ladder's discrete appearance makes it an ideal solution for access and egress requirements. The ladder looks like a drainpipe when closed, but opens to a heavy-duty ladder with slip-resistant rungs and a safety rail. Jomy Safety Ladder Co., 1728 18th St., Ste. 201, Boulder, CO 80302. Phone 800-255-2591.

Jomy Safety Ladder

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HEAT-N-GLO Fireplace Products

Looking for quality fireplaces that combine efficiency anc aesthetics? Call for our brochure on energy-saving built-in gas or woodburning fireplaces. Including see-thru three and four sided glass fireplaces, inserts for pre-existing fireplaces or our direct-ven (no chimney) gas fireplace available with remote control. Call 612-890-8367.

Heat-N-Glo

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Accessible Lavatory Insulation

A full color catalog will explain the different Handy-Shield safety covers offered for the new or retrofit projects that need to comply with the American Disabilities Act. The specific use, sample specifications, drawings and color photos are all summarized in this easy to understand catalog.

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Automated Vacuum Transport Systems

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- Perfect for large hospitals and similar buildings that serve thousands of people
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- Full-vacuum and gravity/vacuum tecnology
- Custom design each system to building specifications

Transvac System, Inc.

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Conwed Respond Ultimate I Panel

Conwed Respond Ultimate I is an acoustical wall and ceiling panel designed for use in areas requiring abuse resistance and acoustical absorption. It utilizes a glass fiber core faced with an acoustically transparent open perforated rigid vinyl sheet and wrapped with fabric or vinyl. Ideal for use in gymnasiums, theatres, and multi-purpose rooms. Conwed, 1205 Worden Ave E., Ladysmith, WI 54848. 800-932-2383. Fax: 800-833-4798.

Conwed

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Stone Panels

Ultra-Lite natural granites marbles, limestones & slates Offering natural stones witl 80% less weight. Reinforce for high impact & flexurc strength. Especially we suited for renovation & reclac Saves on back-up framing structure requirements Reduce installing labor costs Used on building exterio throughout the world. Als elevator cab & lobb cladding, ceilings & locatior requiring real stone but les weight.

Stone Panels, Inc.

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Bicycle Lockers

CycLockers are all-steel modular bicycle storage cabinets that accommodate two bicycles per unit. Modules can be used individually or in linked groups sharing common walls. Choose from over 170 coating colors, two-toned color schemes, or stainless steel versions. For new brochure call 1-800/547-1940 ; request extension 530. Columbia Cascade Co. Portland, Oregon.

Columbia Cascade

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Concrete Waterproofing by Crystallization

Applied as a slurry coating, Xypex is a chemical treatment that waterproofs by penetrating the concrete with a crystalline formation that 'plugs' the pores of the structure preventing water seepage. Xypex is ideal for use on the 'inside' of wet underground structures.

Xypex Chemical Co.

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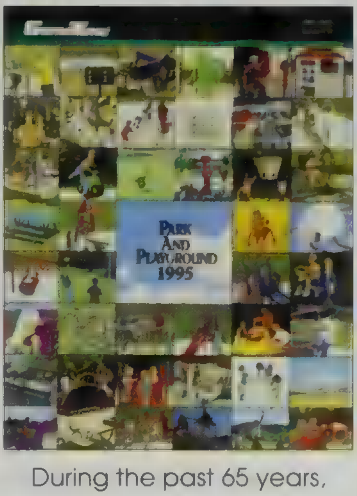
Play Equipment



During the past 65 years, GameTime has been the leader in playground safety, design, durability and innovation. GameTime is committed to providing safe, accessible, environmentally friendly play equipment. 1995 will be our most comprehensive and exciting equipment offering. To learn more, call your GameTime representative at 1-800-235-2440

GameTime

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Trespa® Toplab® Lab Panel

Trespa® Toplab® grade resists strong acids, e.g. 96% Sulfuric, and other chemicals. Toplab is durable, easy-to-clean, and available in colors. It will not rot, rust, delaminate, or support bacteria. Toplab is available in sizes up to 1" thick and 12' in length; it remains flat for excellent butt joints and is 25% lighter than epoxy. 1-800-4-TRESPA.

Hoechst Celanese Corp.

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Introducing the FiberClassics Columns and Balustrading. These fiberglass composite products are the leaders in their industry. FiberClassic columns are loadbearing and architecturally correct. The same premier precision as our other products; wood columns, moulding, niches, and much more. Worthington presents the top architectural products available today, shipped factory direct. 44-page color catalog available. 800/872-1608

Worthington Group, Ltd.

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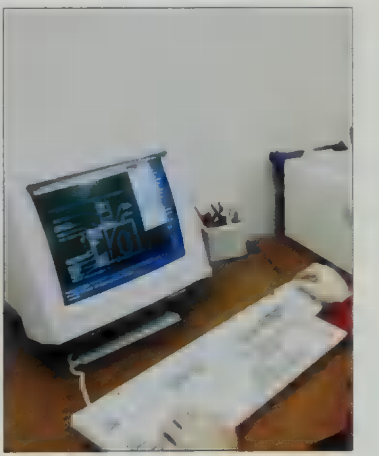
SENERGY CAD-NET SOFTWARE



Architects can cut hours to minutes when designing exterior walls with Senergy's CAD-NET, a new AutoCAD - compatible (V.11 and higher) specification & detail drawing program for Exterior insulation & Finish Systems (EIFS). The CAD-NET program provides specifications & details for Senergy's Senerflex, Senerthik & QRsystem. CAD-NET is available on either 3-1/2" or 5-1/4" diskettes. **For more information: Senergy 1-800-221-WALL. Leaders in EIFS.**

Senergy

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TOTAL DOOR® Systems by Openings

The TOTAL DOOR® SYSTEM is an architect-designed integrated door assembly. In includes prefinished door panels and all hardware. Fire rated pairs do not require coordinators, vertical rods, astragals, flush bolts or floor strikes. Will retrofit to any frame. Meets all codes and ADA. Wood and metal faces available to 3 hours. Lifetime limited warranty on locks and panics. Call OPENINGS®, 40 West Howard, Pontiac, MI 48342 (810) 335-7380)

Openings

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REASONS Stacking System for Improved Office Spaces

REASONS from Transwall Corp., a manufacturer of movable office partitions & systems furniture, is a new stacking system designed to provide improved office space facilities with maximum flexibility & a minimum of parts inventory. It offers quick off-module changes for work surfaces & overhead storage, which can easily be rearranged on horizontal rails without structural panel changes. Total wire management is provided in the 4" thick panels, as well as an unlimited choice of aesthetic color selections.

Transwall Corp.

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Manufacturers' Spotlight

Natural Design Collection

When selecting natural building materials for the home or commercial building, choose carpets woven with nature's resilient fibers. Sisal, coir, reed, jute, and wool are woven on power looms into traditional textures and patterns. With the proper care, these floor coverings will retain for years the characteristics of their natural origins. Design Materials, Inc., 241 S. 55th St., Kansas City, KS 66106, 800-654-6451

Design Materials, Inc.

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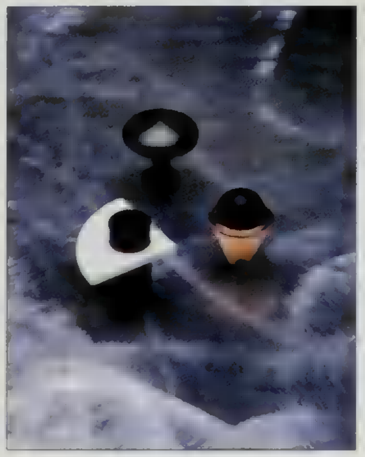
Cabinet Hardware/ Bath Accessories



Green Street Details offers a complete line of contemporary and transitional cabinet hardware and bath accessories. Components are precision machined, hand finished, and assembled at their own manufacturing facility in Portland, Oregon insuring complete quality control and on time delivery. Custom projects, finishes, and colors are welcome. Call (800) 275-7855 for more information or a free catalogue.

Green Street Details

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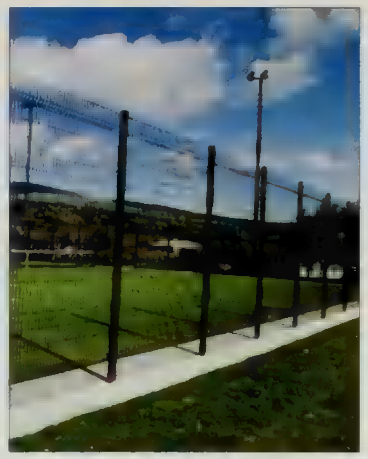
Fence Systems



This new aesthetically appealing Euro-design fence system combines see-thru good looks with strength and durability of 6-gauge galvanized steel mesh. Powder-coated in a large variety of colors to suit any design and enhance the appearance and security of any property it surrounds, this fence system is virtually unclimbable, rugged, maintenance-free and easy to install. OMEGA FENCE SYSTEMS, Laval, Quebec. 1-800-836-6342.

Omega Fence Systems

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CHADSWORTH COLUMNS™

Color brochures feature wood, fiberglass, E.P.S. stone and marble architectural columns. Variety of sizes and styles. Round, square or octagonal with plain or flutec shafts. Job site delivery Largest selection anywhere CHADSWORTH...The Columr Source. For catalog (800 394-5177. Sales (404) 876 5410. Free brochures.

Chadsworth Inc.

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Jacuzzi Whirlpool Bath

JACUZZI WHIRLPOOL BATH - presents The International Designer Collection of whirlpool baths, faucetry and The J Dream™ Family of shower systems. This 50-page, full color catalog features beautifully styled products incorporating the most innovative luxury features. For more information please call 1-800-[illegible] 6889. Catalog free of charge.

Jacuzzi Whirlpool Bath

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Superior Introduces the Direct Vent Peninsula Gas Fireplace

The new Discovery Series Direct Vent Peninsula Gas Fireplace can be installed virtually anywhere due to its top and side vents. And, with multiple 45° and 90° elbows, you can vent up to 20' horizontally and 40' vertically ... It takes venting to a new "height"! The DS-PF's beautiful five-fingered flame fully envelopes the rugged six piece log set. Plus, its clean face design allows facing material to be brought to the top of the canopy. Available in natural and propane gas. For more information contact Superior Fireplace Co. Telephone 800/854-0257. FAX: 714/521 5223

Superior Fireplace Co.

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Level-Right® Self-Leveling Floor Underlayment

Level-Right® saves time and money in any floor leveling situation. Designed for thin-capping concrete - even over old floor goods, adhesive residue, and wood subfloors, usually with no shotblasting or scarifying required. Can be featheredged and achieves compressive strengths up to 5,500 psi - for large projects or small repairs. For free Specification Packet call 1-800-356-7887 or fax 612-478-2431.

Gyp-Crete Corporation

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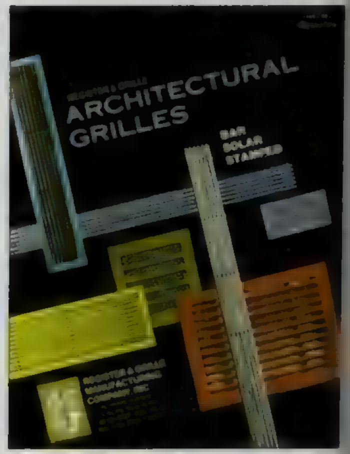

Unusual visual effects emerg when our grilles are designe for area effects. Versatility the theme. R&G offers arch tects and interior designe many ways to express th changing forms of metal wit the integrity of R&G's arch tectural grilles. Custom c standard finishes are availabl plus any grille can be made i matching color to blend wit your decor. 202 Norma Ave., Bklyn, NY 11222. 800-52 4895. Fax: 718-349-2611.

Register & Grille Mfg., Cc

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Architectural Concrete-Coloring Products

Limitless design options are possible using Scofield's quality products to add permanent, nonfading color to concrete. New and exciting, LITHOTEX™ Colorstone™ creates multicolored, textured, stone-like hardscapes and floors. CHROMIX® Admixture color-conditions vertical or horizontal concrete in earth-tone colors. LITHOCHROME® Color Hardener produces dense, abrasion-resistant surfaces for walks and drives, and LITHOCHROME® Chemstain™ adds variegated color to old or new concrete. Charts show standard and popular designer colors. Call (800) 800-9900.

L.M. Scofield Co.

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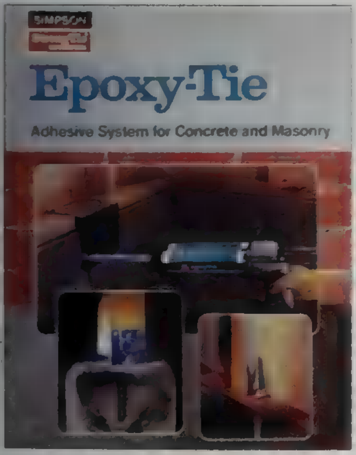
Anchoring bolts easier with EPOXY-TIE ™



Low-cost epoxy system for retrofits in concrete or masonry provides stronger anchoring than can be achieved with mechanical anchors. Epoxy-Tie™ bonds with surrounding concrete; anchor is less prone to side-burst during close-interval installation. Higher resistance to moisture and vibration than mechanical anchors. Full information in brochure **F-ET**.

Simpson Strong-Tie® Co., Inc.

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Pave with Grasspave^2

Grasspave^2 invisible porous pavers are made entirely from recycled plastics, saving truckload volumes of plastic articles from landfills, and creating sparkling green and real grass-covered spaces where asphalt once reigned - in firelanes, overflow and event parking lots, and residential drives and parking.

Invisible Structures, Inc.

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Metal Graffiti

Surface Design + Technology produces vandal resistant, random swirls on virtually any size and type of metal for elevators, doors, walls, ceilings and furniture. These finishes can be made to your specifications in stainless steel, brass and copper. Available in any sheet size including 60 inch widths. For additional information on custom and standard designs, call 800-637-1127.

SURFACE DESIGN + Technology

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ADVERTISEMENT

ARCHITECTS' CHOICES AFFECT ENVIRONMENTAL QUALITY

As the world's population grows our consumption of raw materials continues to increase and the need for shelter increases as well. Less clear is how the building materials choices we make affect attempts to attain sustainability. In assessing environmental impacts of their choices, design professionals may ask themselves:

Can I be assured the materials I specify will be available for future generations in perpetuity?

Of the major building materials, only wood comes from a readily renewable source . . . trees. There is no denying trees can be — and are being — renewed at a phenomenal rate. More than 1.7 billion were planted in the U.S. in 1993 and millions of acres were reforested through planned natural regeneration. This fact of renewability makes wood the only common building material that can be assured of being available to future generations forever.

Renewable or recyclable — what's the difference?

Recycling is a positive step toward sustainability, but it is not a panacea. Few building materials can be manufactured using 100% recycled materials and none can be recycled indefinitely. Each time a material is recycled, it is degraded and a greater percentage of virgin material is needed to maintain its structural integrity. Recycling has merits — it buys us time to find alternatives, and it helps reduce the need for landfill space. But it does not solve all our environmental problems. Renewability, on the other hand, is a lasting solution for the supply of materials that can be renewed. Wood is the only primary building material currently being renewed as virgin fiber for future generations.

Is the material energy efficient?

The importance of energy conservation is twofold. First, much of our energy is derived from nonrenewable fossil fuels. We can't afford to waste it. Second, the implications of energy use, in terms of air and water emissions, ozone depletion, and the potential for global warming, are manifold. Architects can play a role in energy conservation by specifying materials which are energy efficient in both their manufacturing and end use. It takes far less energy to produce solid sawn lumber products than any of the alternatives. And in most cases wood requires less insulation to be used to achieve comparable energy efficiencies in use.

Does the product have unique advantages?

In addition to its renewability, a unique advantage of wood is its role in carbon sequestering. When trees grow, they absorb carbon dioxide and release oxygen, helping to purify the air we breathe and reducing the buildup of atmospheric carbon-based gases thought to contribute to global warming and the greenhouse effect. The carbon remains in the wood even after it is made into a usable product, which means buildings constructed of wood serve as carbon sinks. Meanwhile, the carbon sequestering cycle is continued with the trees planted to replace those harvested.

For more information regarding environmental impacts of various building materials, write WWPA, Dept. AR, Yeon Building, 522 SW Fifth Avenue, Portland, OR 97201; or fax (503) 224-3934

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Advertising Index

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(E) Engineering & Retrofit
(I) Industrial Construction & Renovation
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Bold Face - page number
Italics - Reader Service number

A
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Architectural Record Books, **106**
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Artifice, Inc., **99** ; *23*
(800) 203-8324
Autodesk, **43 to 45**
(800) 964-6432

B
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Bilco Co., **96** ; *19* [G-E-L]
(203) 934-6363

C
California Products Corp., **100** ; *24* [G]
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Certainteed, Celadon Ceramic Slate, **6** ; *4*
(800) 699-9988
Chemical Lime Co., **48W** ; *14*
(800) 274-8977
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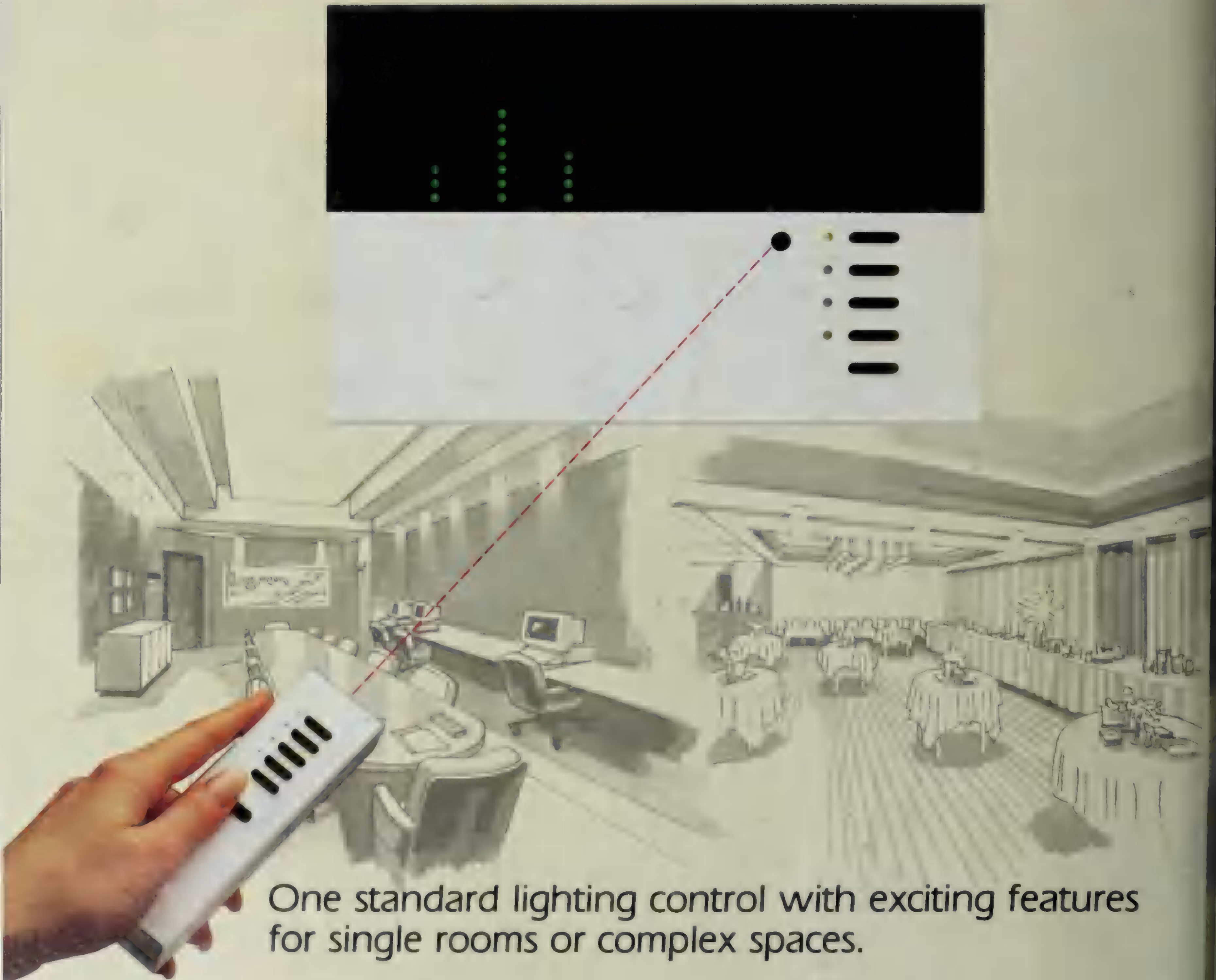

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Letters

Stop, Thief!

Who stole our profession? When did they do it, and why didn't we stop them? How can we get it back?

In 1992 I graduated from Ball State's College of Architecture. While in school I was handed a glorious image—a vision of a profession with extreme pride and wide-reaching possibilities. However, during my schooling I worked for architects to pay my tuition and my eyes were opened. Our profession is all but gone.

When our traditional architectural practice was lost, the level of recognition and the self esteem that goes with it was lost as well. Burglary is typically a sneaky, silent act occurring under the dark cloak of night. The theft of something valuable is an embarrassing and infuriating thing to experience, especially when it occurs right under our noses. Often when we realize what has taken place, it is much too late to do anything about it—we feel helpless. If the truth be stated, we architects *gave* our profession away and deserve the bitter fruits of our actions.

Responsibility is the key to our loss. Due to the recent legal climate, we as architects have jumped at every opportunity to relinquish our responsibilities. We have gladly given our duties (and income) to interior designers, civil engineers, structural engineers, as well as construction managers, in order to avoid accountability. This has opened the door for these groups to reach into our "china cabinet" and take our valuable clients. Architects are the ones responsible for the deterioration of architecture.

Now is the time to take back our profession. It will not be easy, but the solutions are simple: we architects must take on more of our traditional responsibilities; most design tasks should be performed in-house; do not be afraid to learn; and we must not evade our duties of construction administration . Many of the legal fears which have caused us to cower in the corner can be kept at bay with good, well-studied contracts and procedures...our security system.

Public recognition of architects has also deteriorated severely as a result of our actions. Additional steps can be taken to regain our recognition and boost our profile. Many of our image problems will be addressed when we perform our duties as mentioned above, but other actions will aid the effort. Architects rarely keep up with other professionals in terms of advertising. Company cars are the perfect opportunity for this, yet most of ours are left indistinguishable. Advertisements should be professional and positive, not sarcastic or negative.

The fear of our predecessors has proven deadly to our professional status. Architecture has suffered its greatest loss at our own hands, but with assertive action we can revitalize it and gain back our practice.

Brent A. Doctor
GTK Architects
Fort Wayne, Ind.

Stretch Beyond Style

Regarding your reference to style in your October issue [RECORD, page 9], I would like to dissent. What many, including me, object to in so many references to style in the architectural and more general media is that it seems to be implicit in those voices that "style" is the "driver."

continued on page 23

Calendar

Through February 13

A retrospective of Emilio Ambasz's last 20 years of work is on exhibit at Milan's Palazzo della Triennale.

Through February 15

Exhibit of Zaha Hadid's recent projects, presented by the Architectural League. Grand Central Terminal, New York City.

February 19-22

National Roofing Contractors Assn. annual convention and exhibit, Ernest N. Morial Convention Center, New Orleans.

February 26-28

Restoration 95 exhibition and conference, Hynes Convention Center, Boston. Call 617/933-9699 for more details.

March 15-17

WestWeek 95, Pacific Design Center, Los Angeles.

March 17-18

"Built Landscapes, Social Ideology, and the Politics of Place" conference will be held at Harvard GSD. Call 617/495-2573.

March 31-April 1

"Inherited Ideologies: A Re-Examination" will be the subject of a dialogue among participants at the University of Pennsylvania, Philadelphia, part of a year-long series on "Women in the Public Sphere." Call 218/898-3657 for details.

March 31-April 2

Monterey Design Conference, Asilomar, Calif. This biennial retreat will explore "the magical and mystical aspects of creativity and technologies." Call Donalee Hallenbeck at 800/886-7714 for further details.

April 1

Conference registration deadline for "The Art of Building Cities" exhibition and conference is April 1. The event, sponsored by the Classical Architecture League Inc., a not-for-profit group committed to the study of traditional urbanism and architecture, plans

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ARCHITECTURAL RECORD

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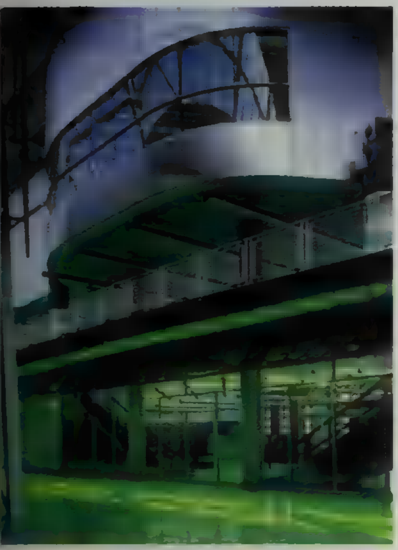
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Focus: HOPE Center for Advanced Technologies, Detroit, by Smith, Hynchman & Grylls Associates, Inc., architect (page 68).

Next month
Projects include work by architects Rem Koolhaas, Robert A. M. Stern, and Kallman, McKinnell & Wood. Building Types Study 724 features leisure facilities.

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Cover: Focus: HOPE Center for Advanced Technologies, Smith, Hynchman & Grylls Associates, Inc., Architect. ©Gary Quesada of Korab/Hedrich Blessing photo

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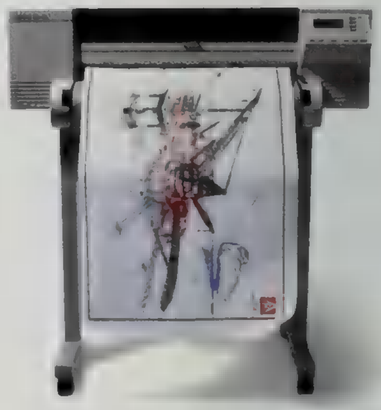

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ARCHITECTURAL RECORD Editorial

Is Government Downsizing Good for the Architect?

Private industry has been downsizing drastically for years, figuring that efficiency will more than make up for staff reductions. Now it's the turn of government, and after years of unrealized pledges by Reagan and Clinton to do it, it now looks as though its time has finally come.

This could spell rough times for architects, as Elena Marcheso Moreno's blunt article on pages 28 and 29 warns. The General Services Administration plans cuts of $1.3 billion in this year's budget (mostly for buildings). Federal public housing support and Section 8 rental assistance may drop by $800 million over five years. The power of the highway construction interests could stifle the emerging role of the architect in public transportation design. No one knows if reduced public spending will dampen construction or unleash funds through investment incentives and tax cuts, especially of capital gains taxes. Delegation of decision-making to the states and cities could bring renewed flexibility to programs—or it could simply trigger more cuts. Meanwhile an array of governors and mayors elected in recent years has also pledged to cut taxes and programs, seeking to squeeze the most value out of the public dollar, including construction. The architectural selection process was given a severe jolt with the November defeat of Jack Brooks (D.-Texas), an aggressive champion of qualifications-based A/E selection. And all signs point to a pullback in the enforcement of regulations over the environment, landmarks preservation, and disabled access, thereby reducing revenues to professionals in the compliance consulting business, but encouraging possible development by swinging the balance in favor of stronger property rights.

One thing is clear. Architects will need to speed up the changes many are already making in the way they do business. Chiefly, they must become more proficient, aggressive, and proactive in going after what government work there is. The new breed of local elected officials is moving fast towards increasing partnerships with local businesses and to privatize many public services, including the design and construction of such active building types as schools and prisons. Already in place at the federal level is a performance database where all A/E firms that have done work for the Corps of Engineers are rated according to a rating sheet used at two key phases of the project.

The new toughmindedness in the conduct of our affairs is designed to bring about a new prosperity, and like a tide will raise all ships that are seaworthy. For architects, that means developing hard-headed, targeted marketing plans and tactics at the local level while championing the values of design quality and sensible land development in city, suburb, and countryside. It means fighting to meet the housing and related needs of the sick and the poor and still earn a reasonable fee. It means controlling project costs and schedules and contributing measurably to the work of multi-disciplinary building teams. It means providing a service with leaner staffs and greater reliance on the new electronic practice tools. Above all it means more architects finding a way to expand services above and beyond building design into real estate, facilities planning, and other types of consulting. In the new political climate none of this will be easy. *Stephen A. Kliment*

We bid good bye to Roscoe C. Smith, III, publisher of ARCHITECTURAL RECORD and thank him for his many contributions in his seven years on the magazine. As Roscoe takes on his new duties with Knowledge Industry Publications, Inc., all of us at RECORD wish him great success. *S.A.K.*

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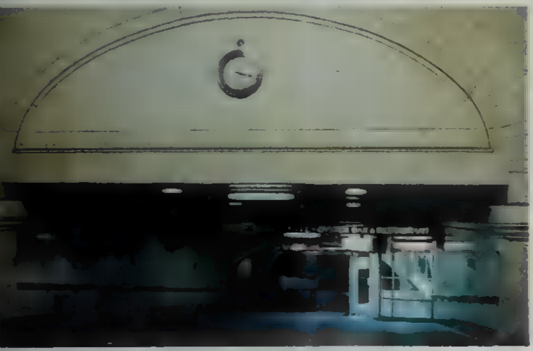

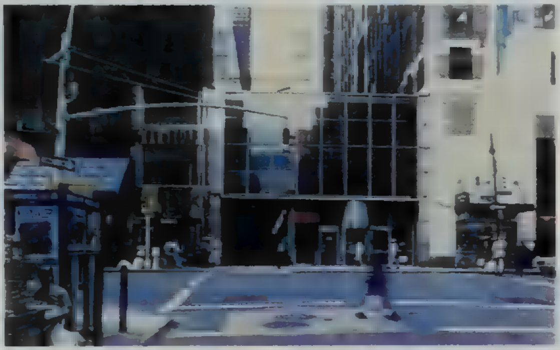

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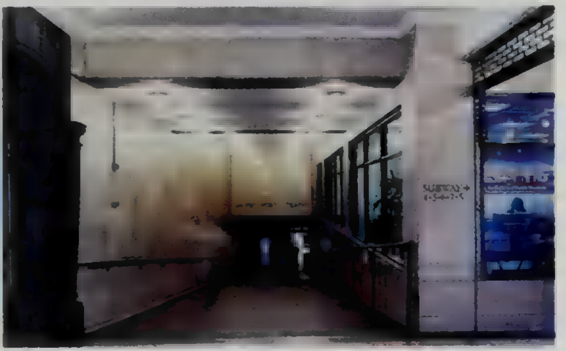

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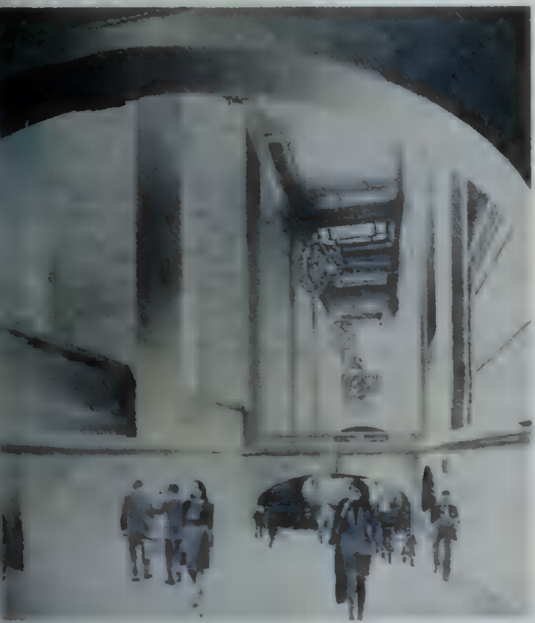

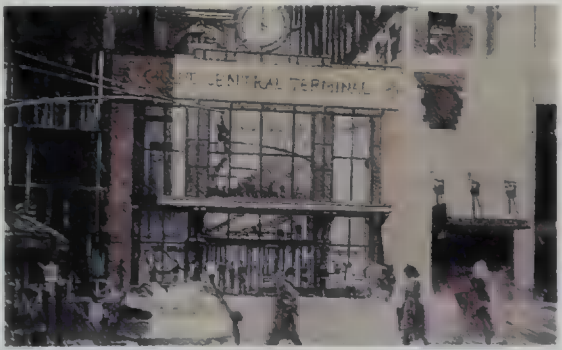

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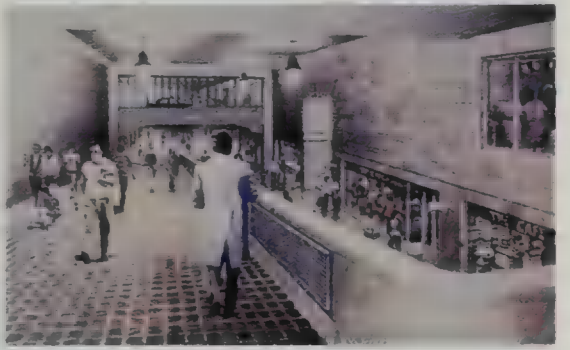

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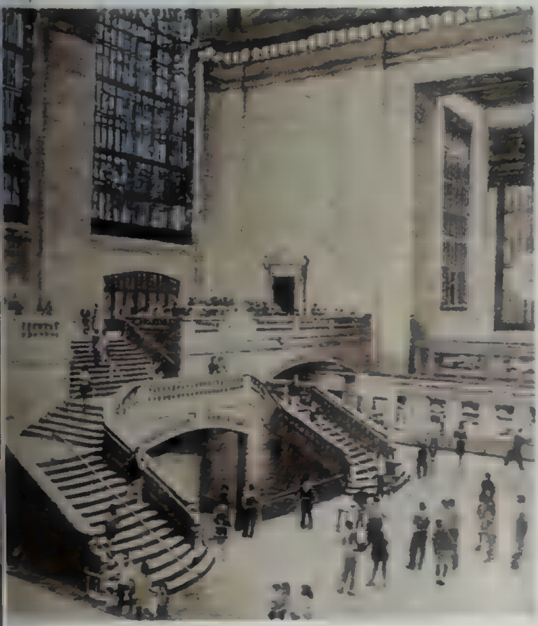


The restoration of New York City's greatest public space will uncover a myriad of lost splendors. Beyer Blinder Belle Architects will peel away decades of additions and infill at New York City's Grand Central Terminal to open up lost views and clear up the building's cluttered circulation.

Major entrances have been rethought, while inside, the lower levels will be given new life. Once the ramp leading down to the lower level gates was a dramatic multi-story space that opened on to the Grand Concourse above. But a short 14 years after the building opened in 1913, the ramp was slabbed over to accommodate new ticket windows (1). Now the ramp will be returned to its original glory.

There will be one correction: the route that passes over the space from the Grand Concourse was originally bordered by 9-ft walls. The walls will be removed so that interested passengers can gaze down the corridor (2). An entrance at the corner of Vanderbilt Avenue and 42nd Street will also be opened up. There, an open, double-height space at the right of a swooping ramp is now filled in by a Federal Express office (5). The office will be swept away to open up views below once again. Above the ramp, a window will look back out through the building to the taxi entrance along Vanderbilt Avenue (6).

On its Lexington Avenue east entrance, the building will have a whole new look. What is now no more than an ugly hole punctured through the side of the building (3) will become a more formal entrance (4). A clock marks the entrance, which is on axis with 43rd Street. Passengers will feed in from the corners into the concourse, as they do now.

Finally, in a slightly more controversial part of the program, the Grand Concourse's elegant stairway will be repeated at the other end of the great room (7), and will lead up to restaurants in the balconies that line the space. Retail space on both levels will increase to 160,000 sq ft, although the main waiting room, for example, will not be touched. The overall glamour of the building should remain unscarred. *Nicolai Ouroussoff*

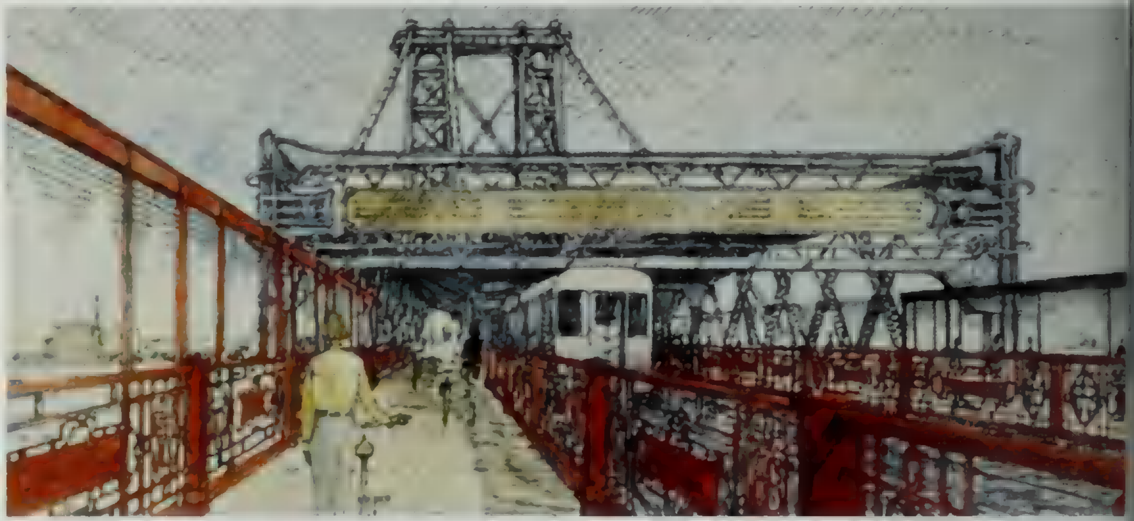
Florida

Palace of Clowns Gets Facelift

Ann Beha Associates is renovating the ornate home of John Ringling North in Sarasota, Fla., as an addition to the Ringling Museum. The waterfront house has long been battered by the elements, and its terra cotta and stucco facades are crumbling. The architects will repair a roofline balustrade, and replace the terra-cotta blocks that make up the facade, each modeled with fruits, baskets, and garlands. Inside, the surfaces are as elaborate: rooms are painted with scenic designs of Venetian celebrations. The structure is dominated by a two-story courtyard enclosed in glass, its walls covered with tapestries. The $8-million renovation begins this month. ■

New York City

Saved: Historic Williamsburg Bridge



The Williamsburg Bridge—once so dilapidated that it was regularly closed down for safety reasons—is undergoing a major rehabilitation. Steinman, Boynton, Gronquist & Birdsall Engineers has been charged with keeping the structure up, while Beyer Blinder Belle has woven together the remaining historic fabric to create distinct entry points to Brooklyn and Manhattan. On the Manhattan side, stone walls, iron railings and an old trolley ticket booth were pieced together to add character to the bridge's entrance. Along the bridge itself, a bike path and pedestrian route is destined to be encased in a stainless-steel mesh tube for safety reasons (photo). Subway trains will continue to cross on elevated tracks. The fin welded casing will be painted red. The architects also specified handrails and lighting details to give the space a human scale. Last month, the project received an award from The New York City Arts Commission. ■

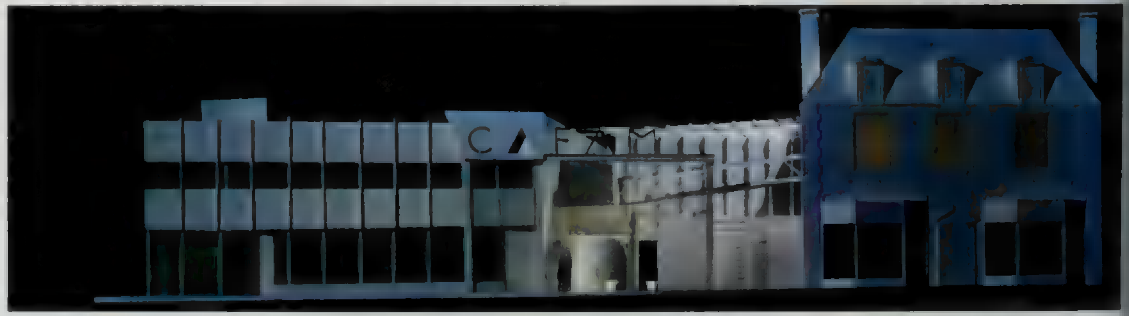
Connecticut

Centerbrook Gives Campus a Focus

An infirmary designed by Ernest Flagg in 1907 has been moved to make way for an arts center at the Pomfret School in Connecticut. Centerbrook Architects will relocate and renovate the infirmary, now the Pyne dormitory, at the edge of the campus, while a new "Centennial Building" will take its place. The red brick building will help form a central courtyard—a great lawn—for the school. ■

Los Angeles

Craft and Folk Art Gallery Adds Yardage to L.A.'s 'Museum Mile'



A refurbished, stately brick building on Wilshire Boulevard is home to Los Angeles's Craft and Folk Art Museum. The museum—across from the La Brea Tar Pits and alongside the L.A. County Museum—is meant to reinforce this city's version of Museum Mile. Hodgetts and Fung Architects have kept the building's distinct mansard roof and bay windows. Original bowstring-wood trusses highlight the third-floor galleries. The architects added a triangle-shaped grand staircase and a museum store on the groun level. Eventually, the structure, built in 193 will be combined with a 1950s-era glass and concrete building next door to form one complex. An empty lot separating the two w become a courtyard, and the concrete and glass addition will house more galleries, a library, and offices. A new facade with the museum's logo will connect the buildings. ■

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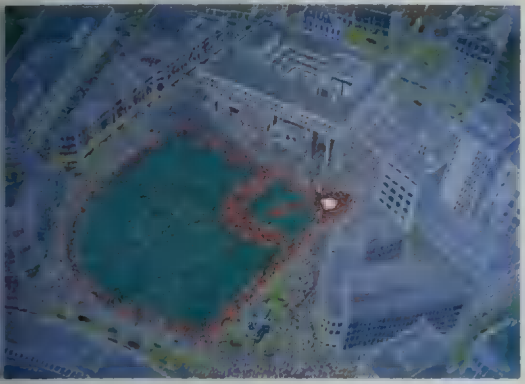


oston's City Hall Plaza (above) was the
us of an ideas competition. Designed by
llman McKinnell & Knowles in 1968, the
st, Modernist plaza is still considered a
ital space by many. Five projects shared
top prize for the plaza's redesign and
re chosen from a field of 193 entries,
luding a class of eighth-grade students.
nong the winners, Framework for Civiliza-
n by City Planner Barbara Barros of City
w Town View proposed the installation of
lemountable kit of parts for public art that
uld change seasonally. Tomb of the
mbino by architects Chip Sloan and
ndall Imai would build a ballpark on the
iza with a memorial of Babe Ruth located
hind home plate. *Nancy Levinson*

Villiam J. Stanley III was awarded the
nerican Institute of Architects 1995
hitney M. Young, Jr. Citation for "profes-
nal responsibility towards social issues."
anley, past president of the National Orga-
zation of Minority Architects, is a member
RECORD's Editorial Advisory Board.

en architects have won the Western Red
dar Lumber Association/AIA Design
vards. The winners are: Thomas L.
sworth, John R. Caulk Architects, James
tler Architects, Criss Kieran Gore Archi-
ts, Jeremiah Eck Architects, Hugh Newell
cobson, The Hulbert Group, Hooper
msted & Hrovat, David Salmela Archi-
ts, and Dennis Wedlick Architects.

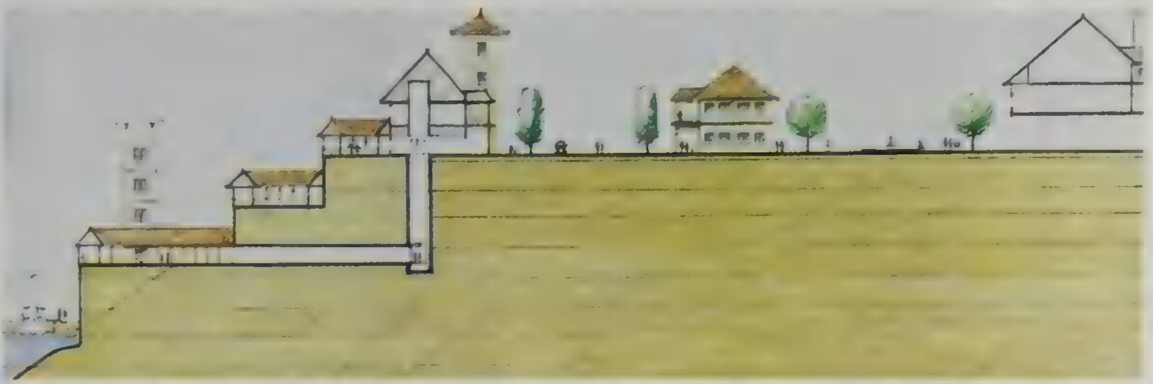
Hillier/Eggers has formed a new division
r the design of sports facilities, including
adiums, gyms, and recreation centers.

emembered

bert Marquis, 67, known for creating
using with a social focus, died Jan. 3 follow-
g pancreatic surgery. His Rosa Parks
partments in San Francisco changed a crime-
ed housing project into a safe haven for
lerly tenants. ■

Japan

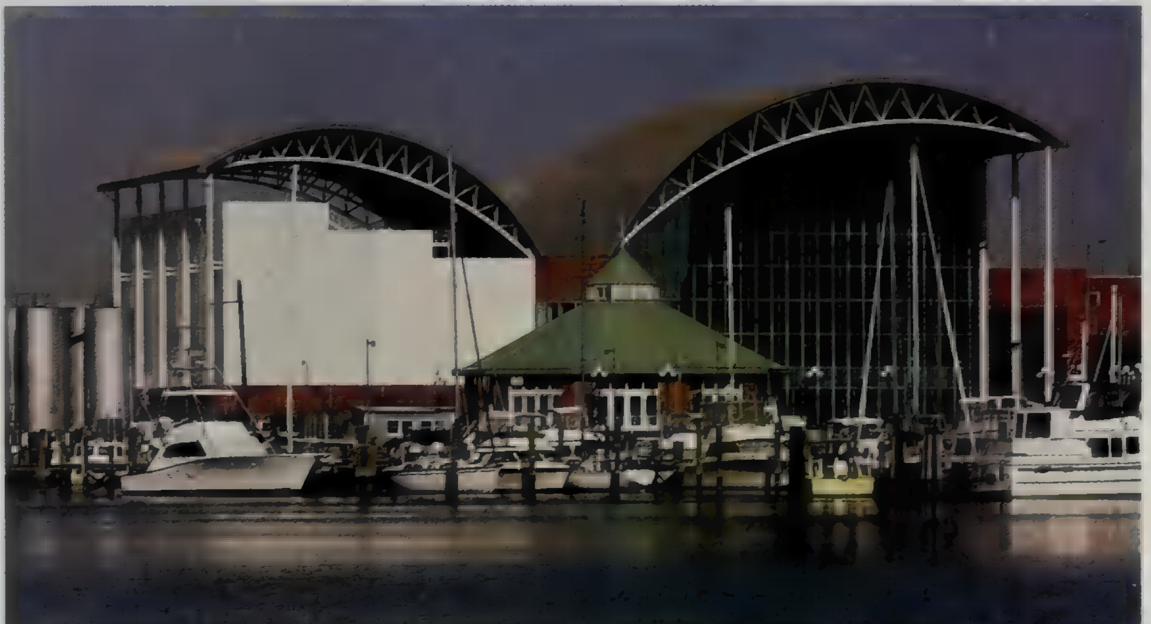
Hillier Group to Create a 'Village of the Dam'



The Hillier Group has completed a master plan to turn a 1,220-acre reservoir in Japan into a pristine recreational development. A government-subsidized dam—scheduled for completion in 1998—will be part of a new pond at the foot of mountainous, wooded terrain. Along the embankments, Hillier will extend a small, existing roadside village down to the water's edge. The project will include an Imax theater, a museum, and housing for student groups. By extending the linear pattern of the village, much of the natural vegetation will be saved. The steep incline opens up views towards the water. Walkways will be cut into the mountain and connected to elevators to the buildings above. ■

Virginia

Air and Water Mix at Award-Winning Museum by Mitchell/Giurgola



An air and space museum in Hampton, Virginia garnered first prize in the Pan American Biennial of Architecture. Designed by Mitchell/Giurgola Architects, the building is actually two museums in one. The 118,000 square foot space includes a museum of local history as well as an air and space museum. In order to combine the two disparate parts of the program, the structure is designed as two arched wings connected by a central spine. The spine, which houses circulation and mechanical structures, is transparent, allowing visitors to look back and forth between the two exhibits. ■

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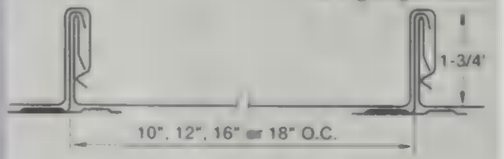

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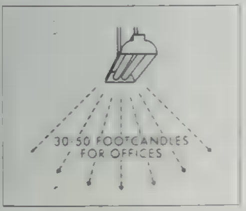

According to the American Optometry Association, 30-50 footcandles of light are recommended for offices, yet most offices today are set up with an astounding 80-100 footcandles. Good lighting is ranked the most important aspect of an office by employees, according to a 1980 National Study of Office Environments. Yet it is often a weak link in a building design and a big drain on productivity.

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From The Publisher

Roscoe C. Smith, publisher of ARCHITECTURAL RECORD for the past seven years, has left McGraw-Hill to become senior vice president/group publisher for Knowledge Industry Publications. We wish him every success in his new position and thank him for his many contributions.

Subsequently, I have expanded my role as group publisher of McGraw-Hill's Construction Publications Group to include direct publishing responsibility for ARCHITECTURAL RECORD, with which I have been increasingly involved for the past few years. In this wider capacity I look forward to greater hands-on involvement and closer contact with RECORD's readers and advertisers. At the same time, we are aggressively looking for an associate publisher who will join the team to make RECORD even more responsive to your information needs.

Meanwhile, we want everyone to know that the many outstanding editorial and market-related programs now in place will continue and be enhanced in the months ahead. I refer to RECORD's ongoing series of market analysis reports that a) enable RECORD's editors to pinpoint the number and type of projects in the pipeline, b) identify active and emerging markets, and c) highlight the most important building types—as well as key designers and owners.

All of which enables ARCHITECTURAL RECORD to provide its readers (and marketers) with the most useful and timely information available from any architectural publication. These unique services—which would not be possible without close cooperation between RECORD and F. W. Dodge—are:

- "Building Projects in Planning" reports, based on data provided by F. W. Dodge, and designed to identify areas of opportunity while projects are in the early planning stages.
- The "Active Market Analysis" portfolio that reports on areas of significant change and emerging opportunity.
- TAG (ARCHITECTURAL RECORD's Total Activity Guarantee)—in which F. W. Dodge data is analyzed and used to deliver vital editorial coverage to architects and owners in the most active building areas.

Other important programs to look for in the months ahead include:

- ARCHITECTURAL RECORD LIGHTING, published quarterly and delivering valuable, in-depth coverage of both interior and exterior lighting, including the most exciting and beautifully photographed editorial ever published on the subject.
- ARCHITECTURAL RECORD's Pacific Rim Supplement reports on building design, technology, and business activity of interest to RECORD readers and marketers, both in the U.S. and abroad. It presents the most important work underway or in planning from Tokyo to Hong Kong, and south to Australia.

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A Warts-and-All Portrait of An Architectural Chameleon

hilip Johnson: Life and Work, *by 'ranz Schulze. New York: Knopf, 1994, 496 ages, $30.*

eviewed by Roger Kimball

eaders who remember Franz Schulze's uperb 1985 biography of Ludwig Mies van er Rohe will come to his new biography of hilip Johnson expecting several things: eticulous research, intellectual sophisticaon, a critical eye, and a compellingly written ccount of its subject's life and times.

is pleasant to report that, for the most art, such readers will not be disappointed. If *hilip Johnson: Life and Work* lacks the uthority of Schulze's book on Mies, it does o largely for reasons separable from his conderable talents as a biographer and critic.

n the first place, when writing about Mies, chulze was dealing with a great architecturl talent; with the creator of the Glass House nd the AT&T Building, he is dealing with a reat parodist and architectural impresario. ust as genuine artistic achievement tends to nd authority to the criticism it inspires, so rsatz work has the opposite effect.

hen, too, by the time Schulze published his ook on Mies, the architect had been dead for early two decades: the contours of his life nd the significance of his work had become earer with the distance of historical perpective. Although he is now in his 89th year, hilip Johnson is still very much a force in he architectural world and many people who ave played an important role in his life and ork might have reason to be reticent.

o in writing the biography of a living figure, chulze was operating with a serious handiap. This is not to say that he has given us a osy picture. On the contrary, this is very uch a warts-and-all production (Johnson id not see the book before it was pubshed)—and it happens that neither the life or the work of Philip Johnson is lacking in arts. But where Schulze's biography of ies can be described as definitive, his treatent of Johnson must be called provisional.

oger Kimball is managing editor of he New Criterion.

© Courtesy of Knopf

Philip Johnson and Mies van der Rohe working together on the Seagram Building.

Nonetheless, this is still an impressive work. Schulze proceeds chronologically, taking us from Johnson's childhood in and about Cleveland, right through his prolific association with John Burgee in the 1960s, '70s, and '80s, and his current projects for Donald Trump. Schulze covers all the usual bases, discussing Johnson's intellectual apprenticeship as a disciple of Mies, his break with Modernism and his emergence as a celebrity champion of Postmodernism and Deconstructivism. He also deals, tactfully but frankly, with Johnson's rather tabasco sex life as a rich, promiscuous homosexual gallivanting around New York, Berlin, and other metropolises.

Schulze is especially good on his subject's early years and intellectual development. At prep school and later at Harvard, Johnson became an intellectual chameleon: ambitious, dilatory, and above all ferociously articulate. He was also a man of independent means, having gotten rich on stock his father had given him as a gift. Johnson's interest in architecture was sparked partly by a visit to the Parthenon in 1928, partly by his discovery the same year of an article by Henry-Russell Hitchcock, Jr., on the Dutch architect J.J.P. Oud. According to Schulze, however, the single greatest inspiration came in 1929 when Johnson met Alfred H. Barr, the founding director of the Museum of Modern Art, which would open that fall.

Johnson fell under Barr's spell and joined the staff of the fledgling museum as the first head of the department of architecture. In 1932 he collaborated with Hitchcock on the famous "International Style" exhibition. This ground-breaking event introduced Americans to such important European Modernists as Mies van der Rohe, Le Corbusier, and Oud, baptized one of the most influential architectural movements of the century, and instantly established the reputation of its dashing 26-year-old co-curator.

It was not until the 1940s that Johnson began practicing architecture. Many of the intervening years were spent on what Schulze rightly calls an "inglorious detour" into right-wing politics. Part of this story is already well known: Johnson's enthusiasm for Huey Long, his admiration in the 1930s for Hitler, his naive efforts to transform politics in this country by starting his own political party.

Schulze provides a much more detailed—and, it must be said, a much more disturbing—account of Johnson's political activities than we have hitherto had. For example, we learn that when Germany invaded Poland in September 1939, Johnson was in Europe and was invited by the German propaganda ministry to accompany the Wehrmacht to the front. He sent back several dispatches for the Rev. Charles E. Coughlin's anti-Semitic magazine *Social Justice*. In one report, he complained that Britain and "aliens" were turning France into an English colony: "Lack of leadership and direction in the [French] state has let the one group get control who always gain power in a nation's time of weakness—the Jews." He also wrote enthusiastically in a letter that "we saw Warsaw burn and Modlin being bombed. It was a stirring spectacle."

The amazing thing is that Johnson was able to emerge from these enthusiasms essentially unscathed. Schulze is scrupulous about presenting the damaging facts of Johnson's political activities, but is reluctant to judge him harshly. It is largely the same with his treatment of Johnson's architecture. He can be quite severe—describing, for example, much of Johnson's work from the 1980s as revealing "a descent to the level of kitsch" that is "unmitigatedly cheap in its effect." But when it comes to offering an overall judgment of Johnson's accomplishment he is surprisingly expansive. This makes *Philip Johnson: Life and Work* a generous book. I am less certain it is just. ■

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An Engineer Imagines, *by Peter Rice. London: Artemis, 1994, 208 pages, $50.*

Reviewed by Joseph Passonneau

An engineer with whom the best architects lways wanted to collaborate, Peter Rice worked on some of the most demanding uilding projects of the last four decades. Much influenced by Frei Otto, the great German designer of tensile structures, Rice ocused the latter portion of his career on ght-weight structures of fabric, plastic, and lass, on transparency, and on light. Diagosed with cancer, he spent the last year of is life writing this book. He died in 1992 and he book was finished by friends, of whom he ad many.

Rice was born in 1935 in an Irish village close o the border with Northern Ireland. Educat- d by priests, he had little interest in terature, or even in reading; but he was fas- inated by numbers. He studied engineering n Belfast and joined the firm of Ove Arup & Partners in 1956. He begins his book with an xtended description of his work as the Arup epresentative on the Sydney Opera House nd the Pompidou Center in Paris.

Rice was preoccupied with materials, with he requirements of fabrication and construc- ion, and with joints—between materials and etween structural members. His mentors were the Gothic builders in stone and glass nd the great 19th-century bridge builders in ast iron and steel. In this book, Rice speaks epeatedly of the "tactile" quality of materi- ls and great structures, of the "trace de la main," of the design that reveals the human and and mind that created it.

An Engineer Imagines is illustrated by a few ovely color photographs and hundreds of iagrams. Rice can hardly speak of a design without including precise, axonometric drawngs of the joints—always the joints.

Rice worried about the difference between rchitecture and engineering, finally deciding the architect's response is primarily creative, whereas the engineer's is essentially inventive"—an unsatisfactory distinction. He shared Auden's view of Iago, explaining that "Iago, as the agent of rational argument, undermines the fragile characteristics of love and loyalty by the constant application of rational argument. . . In the dialogue of architecture and engineering, the engineer is the voice of rationality and reason. It is a role that is all too easy to play. This is the engineer's principal destructive weakness, to play Iago to the architect's, or indeed to another engineer's, Othello." Peter Rice was no Iago.

To Rice, the act of invention was an exercise in morality, almost a religious enterprise. Yet he insisted "there is nothing mysterious in the process of invention. What is needed is just courage, care and attention to detail, and above all, belief and getting started." In the 19th century, engineers were heroes. No history of western civilization would be complete without the names Rice honors: Brunel, Telford, Eiffel. That doesn't seem to be true of engineers in this century—except for Ove Arup, whom Rice calls his "father in engineering." Arup told Rice, "It is my conviction that whilst we have become very clever at doing almost anything we like, we are very backward in choosing the right things to do."

In *An Engineer Imagines*, the author accomplishes what surely was his principal reason for devoting his last year to this book: making vivid the process, excitement, and satisfactions of creative engineering. ■

oseph Passonneau practices architecture nd engineering, and was the dean of archi- ecture at Washington University.

©Richard Bryant

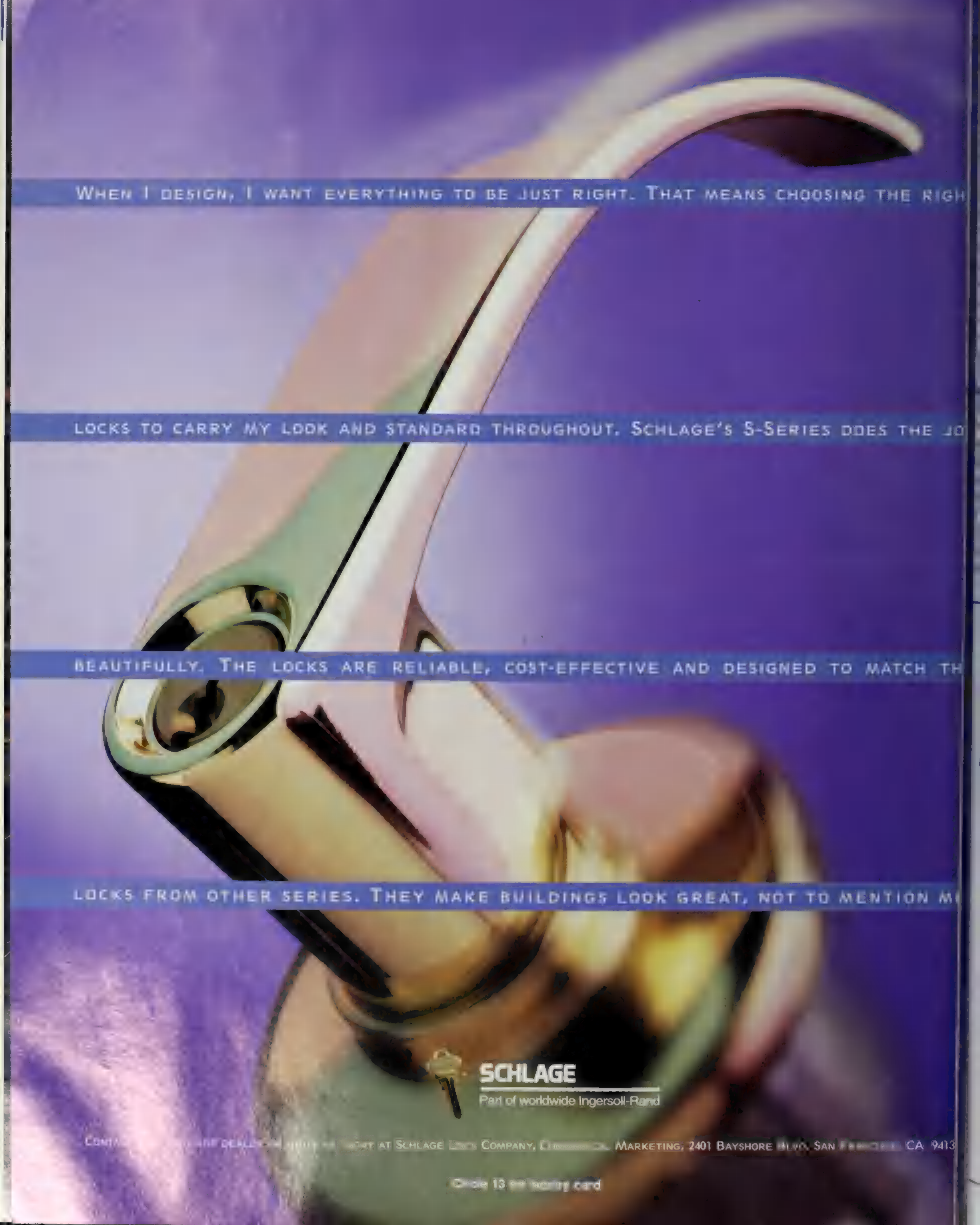
Menil Collection, by Renzo Piano and Rice

Briefly Noted

A Workshop for Peace: Designing the United Nations Headquarters, *by George A. Dudley. New York: The Architectural History Foundation, MIT Press, 1994 428 pages, $65.*
Based on the notes Dudley took as the assistant to the U.N.'s director of planning in 1947, this book provides a blow-by-blow account of all 45 meetings of the committee of internationally famous architects that designed the organization's New York City headquarters. Although it includes more detail than most readers will probably care for, the book is a fascinating record of the egos, politics, and diverse ideas at play in the creation of a Modern landmark. Drawings of various schemes and especially notebook sketches by Le Corbusier provide an interesting graphic history of the project.

The Oral History of Modern Architecture: Interviews with the Greatest Architects of the Twentieth Century, *by John Peter. New York: Abrams, 1994, 320 pages, $68.*
Like a time capsule unearthed after several decades, this book promises the thrill of direct contact with the great lights of the Modern movement, but ends up being a dated artifact from another era. Spliced together from interviews that journalist John Peter conducted in the 1950s and 1960s with the founders of Modernism (including Wright, Gropius, Mies, and Le Corbusier) and second-generation figures (such as Kahn, Niemeyer, Rudolph, and Pei), the book has a disjointed quality due to an organization in which some chapters focus on specific topics (technology, society, art) while others look at individual architects. An audio compact disk included with the book lets us hear the architects in their own voices.

John Lautner, Architect, *by Frank Escher. London: Artemis, 1994, 296 pages, $95.*
Not surprisingly, this monograph is much like the architecture it covers: unruly, passionate, and still a little raw. Lautner, who died last year, was a disciple of Frank Lloyd Wright and, like his mentor, was fond of bold geometric forms and grandiose pronouncements. The grand verbiage is plastered on the opening and closing pages of this book in giant print, and the bold forms of his buildings come across in the other pages. *C.A.P.*



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etters *continued from page 4*
ather, what we should be doing is helping ur clients and our profession see that there re more fundamental issues to face and deal ith than any question of style, and that any rchitecture of substance and quality will be he result of that priority order.

s a practitioner in a part of the country here traditions of all kinds are powerful rces, it is difficult and time-consuming to et clients to look beyond them. Yet when we ave succeeded in doing that, the results have een more satisfying to the clients, the ublic, and to us.

rank Orr
rr/Houk & Associates Architects Inc.
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larification
our August 1994 issue, page 88, titled Roman Carnival," incorrectly listed our ompany, Dougall Design Associates, Inc., as he architect to the Forum Shops project in as Vegas, Nevada. The architect of the orum Shops is Marnell Corrao Associates of as Vegas, Nevada.

erry Dougall
resident
ougall Design Associates, Inc.

Calendar *continued from page 23*
to illustrate how the principles of traditional urbanism can facilitate viable solutions to environmental and social problems. The Art Institute of Chicago July 9-11. Call 219/631-6168 or fax 219/631-8486 for details.

Through April 16
"Thomas Jefferson's Academical Village" exhibition at the Octagon, Washington, D.C., includes over 50 of Jefferson's drawings for the University of Virginia. Call 202/638-3221 .

May 23-25
Lightfair International, Navy Pier, Chicago. Call 404/220-2217 for conference information.

Competitions

- The American Society of Architectural Perspectivists is calling for entries to its 10th annual exhibition of informal sketches and formal presentation drawings. Entries must be received by February 15. Call 617/951-1433 ext 225 or 206/622-3849 for details
- Boston Society of Architects and New England Healthcare Assembly are sponsoring a Healthcare Facilities Design Awards Program. Entries are due February 28. Call 617/951-1433 ext. 232 for details.
- Submission of papers for "Making Cities Livable Conference" are due before March 1. Phone 408/626-9080 or fax 408/624-5126.
- National Institute for Architectural Education is accepting entries for the following student design competitions: Dinkeloo/AAR Traveling Fellowship—$7,000 for four months of travel, of which $3,500 is applied to two months at the American Academy in Rome. Entry deadline: March 1, 1995. Paris Prize: "Engaging the Edge"—Supplemental proposals for Manhattan's Hudson River Waterfront. Entry deadline: May 12, 1995. Universal Design Competition: "Challenged Ground"—Urban Housing and Community Outdoor Space on the Lower East Side of Manhattan. Entry deadline: June 8, 1995. Write NIAE, 30 West 22nd Street, New York, NY 10010 for entry forms and details, or call 212/924-7000; fax 212/366-5836.
- Entries for the Boston Society of Architects design awards program are due March 22. The projects submitted must incorporate sustainable design and sustainable technologies. Call 617/951-1433 ext 221 or fax 617/951-0845.
- Entries for the College Housing Design Competition sponsored by EFCO Corp. and Drury College are due April 1. Licensed architects are asked to develop residential-housing designs for up to 300 students on an eight-acre site adjoining the Springfield, Mo., college. Cash prizes are $10,000 (first prize); $5,000, $3,000, and $2,000. Call David Hutchens at 800/221-4169 for contest details.

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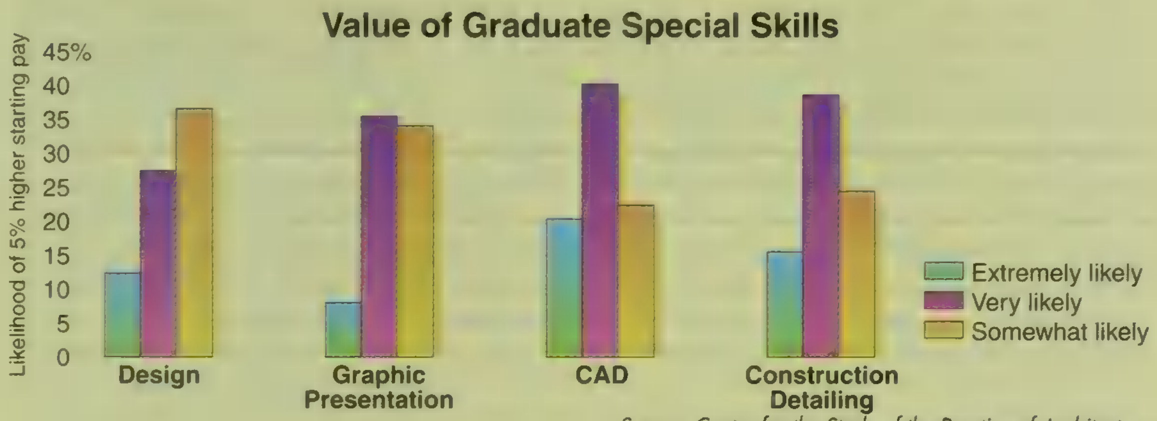
ndicators

ome student skills sell

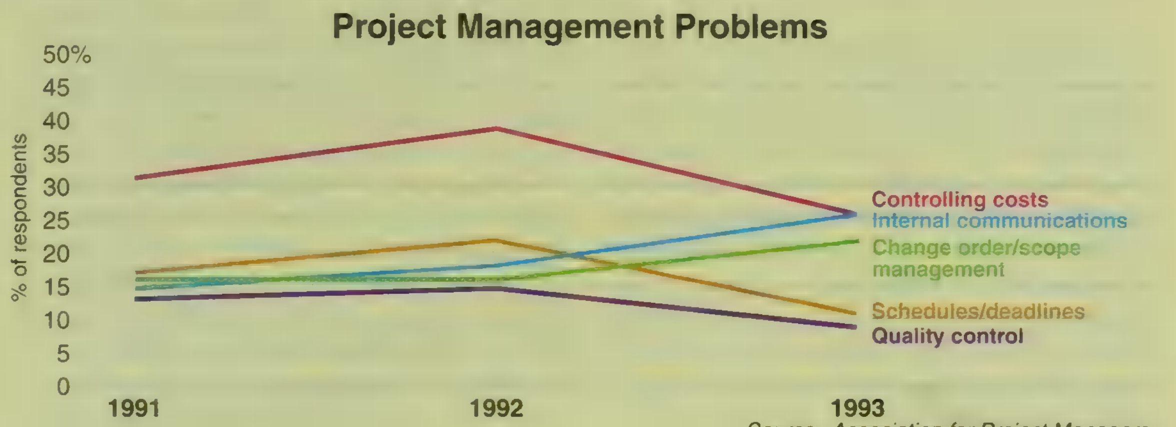
most half of design firms surveyed by the
niversity of Cincinnati expected "somewhat
ronger" business performance and nearly
lf expected to hire architectural graduates.
ne chart shows that firms are willing to pay
ore for certain skills. Respondents rated
ersonal characteristics" an applicant's most
portant credential, followed by profession-
experience, portfolio, and personal
commendations. The attainment of a mas-
rs degree and the particular school were
ted somewhat less important. ■



Source: Center for the Study of the Practice of Architecture

Ms face skill and salary gap

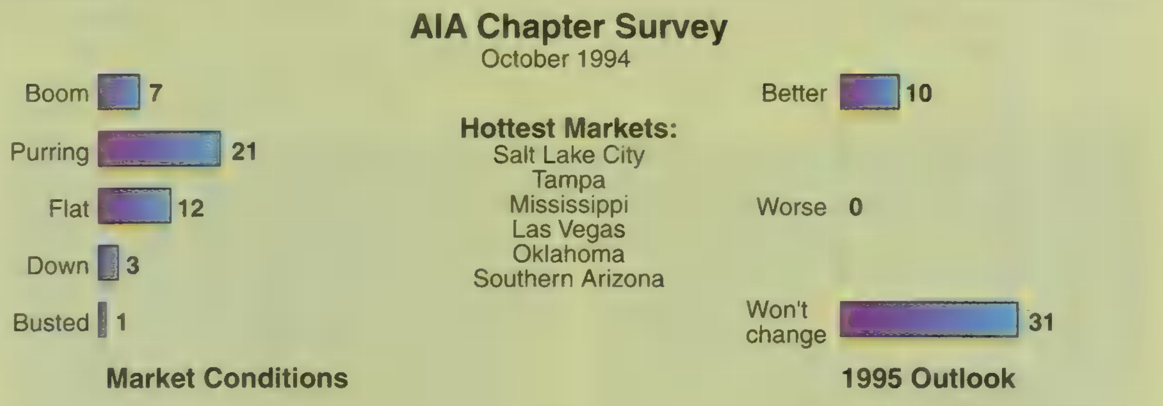
hough project managers are more experi-
ced than ever (a median of 12 years), firms
e having a hard time retaining them,
cording to a survey conducted by Birnberg
ssociates for the Association for Project
anagers ($25, call 312/472-1777). Respon-
nts felt PMs often lacked certain skills
hart), but salaries are low (typically $40,000
$53,000). 43 percent of surveyed firms have
st project managers in the last year, even
ough salary increases ranged from 10 to 13
rcent over the last two years. ■



Source: Association for Project Managers

are we say "boom"?

the BSA's latest survey of market
rospects nationwide, seven AIA chapters
greed that "we're booming and our firms
e desperate for skilled architects . . . ."
ast year five chapters barely made this cat-
gory [RECORD, April 1994 page 27]. The
me number were "purring along o.k." this
ear, focused in the Midwest and West.
'lat" economies were mostly Northeastern
d Western. The "down" and "busted" were
l in southern California. There were 12
wer regions in the worst two categories. ■



Source: Boston Society of Architects

hort Takes

- **Home sales and commercial lending:** Reflecting higher interest rates and lower affordability, sales of existing single-family homes dropped 2.6 percent in November, says the National Association of Realtors. *The Wall Street Journal* reports that banks are easing loan terms for businesses with the exception of commercial real estate.
- **New practice surveys:** Beside the Project Management Survey mentioned above, management consultant Mark Zweig & Associates offers its 1994 Principal's Survey for $195 (800/466-6275).
- **Job training lags:** A Department of Labor Survey, reported in *Engineering News-Record*, shows that less than 60 percent of employers in construction provided any sort of job training, the lowest rate of all industries studied; the project managers study offered similar grim findings.
- **Disaster mitigation training:** The Federal Emergency Management Agency offers courses for architects on disaster mitigation, relief, and recovery [RECORD, June 1994, pages 28-41]. For a catalog, call 800/238-3358. ■

As Budget Axe Falls, What's To Take Up the Slack?

As tax-cut frenzy takes hold, architects can count on less government work. What they can't count on is the promised economic stimulus.

By Elena Marcheso Moreno

For the first time in 40 years, both houses of Congress are ruled by a Republican majority which proffers its Contract with America to the public, promising to blow the roof off the government's "business as usual" approach. The most ambitious members of the new Congress (and the like-minded governors and mayors elected around the country) aim to overhaul Congress and shrink government. Should this agenda succeed, will it empower architects or weaken them? Will cuts in government work be taken up by growth in the private sector?

The Contract promises dramatic deficit reduction, slashes in welfare, more anti-crime measures, tax relief for the middle class, small-business incentives, and increased defense spending. None of these initiatives boosts construction spending per se (as, say, direct subsidies for school building would). Advocates say private spending will increase as government strictures are loosened, but it is very hard to determine the amount of new money that would be available for investment and how much of that would get applied to construction. On the other hand, the impact of lower federal budgets is clear: government building programs will be cut back. The only question is how much.

Budgets balanced on builders' backs?

Led by Speaker Newt Gingrich (Ga.), new House members announced plans to reduce spending across the board and sever large programs, including, perhaps, whole departments. Gingrich expects to pass a constitutional amendment mandating a balanced budget. To achieve this without raising taxes, Congress must find deep and ongoing reductions in spending (especially if the Pentagon and Social Security stay off limits). The Republicans have yet to announce their proposed cuts, but the Clinton Administration, jumping on the deficit-reduction bandwagon, has weighed in with proposed decreases of its own. Although they may prove dead on arrival, they give an indication of the pain [illegible] will inflict. Republicans will likely [illegible] lower spending.

Elena [illegible] Moreno, based in McLean, Va., has [illegible] building [illegible]

•*General Services Administration:* GSA, which was in the midst of restructuring before the new Congress was elected, says it will trim $1.3 billion from its budget this year, with most cuts coming from its buildings programs. Courthouses currently under construction, which account for two-thirds of GSA's new building projects, are being trimmed back $300 million. The agency has been stung by criticism that the courthouse programs are lavish (opposite). As budget cutters look harder for targets, what is considered superfluous may be ever more tightly defined. Jack Brooks, Congress's most ardent defender of quality-based consultant selection (QBS)—which architects have fought hard to keep—was defeated. QBS may again be in jeopardy.

•*Housing and Urban Development:* Clinton targeted HUD to help pay for some of his proposed $60-billion middle-class tax cut. The spending reductions would trim $800 million over five years and consolidate 60 programs into three. The proposed Housing Certificates for Families and Individuals fund gathers all current public housing and Section 8 rental assistance into one fund that provides certificates to tenants. This changes project-based subsidies into tenant-based rental assistance. In theory, these vouchers give tenants the power to choose whether to live in public housing, which is supposed to make housing authorities more accountable for the quality of their units.

Public works are on the hit list

Of public works categories, cutbacks might hit environmental construction particularly hard, notes Robert Murray, who forecasts construction volume at McGraw-Hill's Construction Information Group. Highway spending dwarfs all other public-works categories, but has many friends in the new Congress. ISTEA, the Intermodal Surface Transportation Efficiency Act passed in 1991, which created opportunities for architects rarely permitted under traditional highway programs, has not been attacked. Jeff Nelligan, director of communications for the House Transportation and Infrastructure Committee, says that the $2 billion earmarked for ISTEA awaits designation of a national highway system, which failed to make it to Conference Committee last term.

Laurie Garrett, manager of federal affairs for the Surface Transportation Policy Project, expects transit programs to be targeted by Congress because of the pressure to cut spending on most domestic programs. Marie Bravo of the American Public Transit Association thinks it is a little too early to tell what Congress will do, but says, "If Congress is serious about getting people off of the welfare rolls, it can't cut transit spending." Welfare reform depends on transit, she contends. Talk on the Hill of rescinding "unfunded mandates"—that is rules where costs are passed on to local government—could actually work to the advantage of mass transit, Bravo says. If requirements of the Clean Air Act and Americans With Disabilities Act could be more flexibly interpreted, some funding cuts could be mitigated.

Al Eisenberg, senior director of federal legislative affairs for the AIA, says he is worried about how the new Congress will treat transportation and transit issues, even more than housing. If program decisions are made by the budget committees before the issues get addressed by oversight committees, transit could suffer, he says. New House Transportation & Infrastructure Committee Chairman Bud Shuster (Pa.) has already let it be known that he won't stand by and watch rail programs chip away at highway funding.

The anti-crime mindset on the Hill makes it unlikely that prison construction will be scaled back. In 1994, the U.S. inmate population exceeded one million for the first time, reports the Federal Bureau of Prisons. Bureau spokesman Bill Bechtol says that by 1998, 24 new institutions will be built, with between 500 and 1,500 beds each. "Right now, there are no cutbacks planned for our construction."

Will tax cuts spur building?

Randall Pence, director of government relations for the National Concrete Masonry Association, sees surprising commonality between Congress and the President on issues that could be good for business, such as scaling back government and cutting taxes for the middle class. A reduced tax burden for most Americans plus a capital-gains tax cut is intended to stimulate the economy, making more money available for investment. "It is virtually certain that the capital-gains x will be cut this year," predicts Stephen oore, director of fiscal policy studies with e CATO Institute, a conservative think nk in Washington, D.C. "What remains certain is to what extent." Top rates could slashed as much as half, to 14 percent. oore says, "A change of one or two percent n't have much affect on investments into ildings or other assets, but something ore substantial should be positive."

iillip Kidd, a Stamford, Conn., analyst who ites RECORD's Economic Outlook columns, es some limited advantages in a capital-ins tax cut. By taxing such gains at a lower te than ordinary income, Kidd explains, me building owners will immediately be otivated to sell to new more aggressive mers, capable and willing to spend for hab and modernization. Kidd points to mul- amily and commercial buildings with good nt levels as prime possibilities for turnover. matter what the Republican Congress es, though, Kidd does not expect it to alter e dynamics of the commercial-building ctor. "We are still backing out of the fiasco the 1980s commercial-sector overbuilding."

ie National Realty Committee (NRC) has en lobbying for both a reduction in capital-ins tax and for changes in the depreciation les for leasehold improvements. Presently, mer-provided tenant improvements must depreciated over 39 years, the same as the ole building. NRC's Cary Brazeman is pecting the Hill to act this year to allow mers to depreciate work they do for aants over the much-shorter life of a lease.

terest-rate worries

me analysts are concerned that spending ts may not match tax cuts, causing the leral deficit to rise, which would put ward pressure on interest rates as the gov- nment borrows more. On the other hand, x cuts and incentives to business could ork too well, heating up the economy and ereby unlocking inflation. The Federal serve already sees growth as too robust d has pushed interest rates steadily ward since February 1994.

dd worries about how the new Congress's tiatives will affect interest rates.

ntinued on page 119

When Budget Cutters Take Aim at Architecture

More than $500 million has been wasted on GSA's $3.5-billion courthouse building program, claims a report by the U. S. Senate Committee on Environment and Public Works. "Fancy Italian marble, formal English gardens, and French walnut panaeling is [sic] a sorry way to spend our tax dollars," fumes former committee chair Max Baucus (D-Mont.) in a press release. Though no courthouse actually has such paneling or a formal English garden, widespread press coverage suggests that architects have colluded with judges in creating luxurious judicial palaces. The committee recommended a moratorium on court construction, which may be unrealistic given the nation's focus on prosecution and prison.

As officials are forced to find ever larger program cuts, any architectural grace notes appear to be fair game. "The report doesn't criticize architects," says Marc Smolonsky, the committee's chief investigator. Indeed, it focuses on judges, who, it says, twisted arms at GSA to get 1,000 sq ft offices, private kitchens and bathrooms, and operable windows. But some complaints go to the heart of what architects do.

The report criticizes lump-sum design fees and says "GSA favors experienced firms that usually charge the highest fees," claiming, "this practice adds greatly to the cost of projects." Does the committee propose that fees be bid or an end to quality-based selection? "We're not saying that all design contracts need to be competitive, but GSA needs to offer some constraints," responds Smolonsky.

The committee appears to recommend (though not explicitly) design-build. However, the Foley Square Courthouse, in New York City—a target of particular committee scorn—was a design-build project that the committee says overran its budget by more than $103 million. Though neither GSA nor the developer would accept this figure (nor offer one themselves), the overrun appears substantial, with the design-build process creating little savings incentive in the face of rapidly changing courtroom standards (the cost culprit, it seems, much more than terrazzo flooring or wood paneling). Courthouse design standards should certainly be critically analyzed, but politicians do their part to inflate costs. Foley Square's single biggest overrun was the $200 million in interest costs owed because the government borrowed funds for the project rather than appropriating them. *J. S. R.*

© Roy Wright photos

Kohn Pedersen Fox is architect for the design-builder finishing the Foley Square Courthouse.

New Life for Commercial-Building Orphans

Though lower vacancy rates are making commercial-building makeovers more attractive, significant hurdles all too often remain.

By Peter Slatin

As the nation's oversupply of office-building space ebbs, the market isn't treating all buildings alike. Those in desirable locations with up-to-date services are leasing up. Others not only fail to attract new tenants, they continue to lose existing ones. Worse, some buildings (many built as recently as the '70s) may remain empty; it could be cheaper to build new. Downtowns and older suburbs are seeing what was once class A (desirable and up-to-date) buildings sink to class B or class C status—potentially changing the complexion of the office core. We might call these buildings asbestos orphans, since the huge cost of abating asbestos often tips the balance against viability. "It's an increasing trend," says Peter Miscovich, senior vice president and managing director of the Los Angeles office of ISI, a large interior architecture firm. "The majority of tenants today have sophisticated needs, and they can't go into many of these buildings even when the lease is attractive and the location is good."

What typically consigns a building to orphan status—and what must be addressed before it can pay its way again—is common no matter where it is: outmoded mechanical and inadequate electrical systems, crumbling asbestos, porous facades, and general dinginess (what some call "uglying out" as opposed to wearing out). Buildings built before World War II usually face another barrier: they can't provide the same efficiency (in terms of number of offices per sq ft) as the modular, long-span, big-floor-plate buildings of the post-war era. "Organizational flexibility is key," says Miscovich. "The envelope must be plastic enough to accommodate change. Irregular column spaces, floor areas, or modules, are not preferred by corporations looking for universality."

Biting the bullet on cost

Owners are attempting to snatch buildings back from orphan status. The results, like the buildings themselves, have been mixed. Success appears most likely when owners invest in updated mechanical, electrical, and telecommunications systems. The length of this [illegible] bill has meant that the square footage available in buildings that actually have the latest in technological and communications capacity is becoming scarce, and it is still generally less costly to upgrade an older building than to start from scratch.

The quality of original structures varies widely, from landmark buildings like the Rookery in Chicago and Raymond Hood's American Radiator Building in Manhattan to One New York Plaza, a 1972 hulk that pins down a full block on the New York City waterfront. A tour of some successful and not-so-successful architectural "workouts" helps to put the dilemmas in focus.

Preservationists adopt Dr Pepper

Frank Welch, a Dallas architect and preservationist, describes the Dr Pepper headquarters, a 300,000-square-foot bottling plant and office building, as Modernistic and Deco-ish. It was built in the 1940s to designs by Thomas Jameson & Merrill. "It's a wonderful old building, but it's not the Louvre—it's the Dr Pepper building," notes a local architect.

After the soft-drink company moved out, the building, located in a bustling retail area, was taken over from a failed bank by the Federal Deposit Insurance Corporation and sold at auction to a strip-mall developer, DalMac, which planned to demolish it. (Preservationists elsewhere have tangled with the FDIC, which inherited a huge portfolio in the savings and loan collapse. It has resisted adaptive reuse of the commercial parts of Marina City, the famous cylindrical residential towers in Chicago designed by Bertram Goldberg. It removed original architect-designed furniture from PSFS, the Philadelphia highrise landmark designed by Howe and Lescaze.)

Preservation Dallas, a local advocacy group, managed to rally community interests to push the developers to seek a new user for the building and an adaptive re-use plan. As a result, Barnes & Noble and another retailer have signed letters of intent to lease space. What persuaded the developer to reconsider, say preservation advocates, were plans drawn up for DalMac by architect Larry Good, of the Dallas firm of Good, Fulton & Farrell, that proposed new signage (to call attention to the building in a sensitive way) and imaginative partitioning of the space to take advantage of its retailing potential. However, says Catherine Horsey, executive director of Preservation Dallas, a federally imposed moratorium on demolition expires on April 10, and unless a lease has been signed by then, the owners are free to tear down the building, which at press time had not been designated a landmark.

Good explains that local retailers' initial assumption is always to build new. "But it proved a real political hot potato, and we were able to convince DalMac [that this was the way] to put their best foot forward. The solution makes the building attractive to retailers, and pleases the historic preservation folks because they want a clear delineation of the old and new."

Redoing the recently built

Renaissance Center, a 1.7-million-square-foot Dallas behemoth, was less-loved, but is significant as a pioneering effort in restoring a problem-plagued high-rise to viability. Designed by Hellmuth, Obata & Kassabaum, and completed in 1972, it was sheathed in bronze mirror glass. "The seals failed, moisture penetrated, and it looked horrible," says Richard Keating, then with SOM, whose firm completed a $40-million rehab of the building in 1989. "They [the glass panes] were all yellowy and pewter colored."

Simultaneously addressing technical and esthetic deficiencies, SOM reclad the building (with tenants in place), using five different colors of glass to trace the double-X pattern of the building's wind bracing, which had been visible at night within the original curtain wall. A haphazard spray of rooftop antennas was rearranged to look sculptural. The base of the building (which Keating described as "erupting" from the street) received considerable attention: it was wrapped in granite, pedestrian circulation was improved and made more obvious, and dingy retail and lobby areas were dressed up. "It's a roaring commercial success," says Keating. A similar updating is underway for tower in Houston. But there's no formula tha always works. Keating has yet to have the same success with a similar large tower in Los Angeles (following pages).

Peter Slatin writes on real estate for The New Yor[illegible]

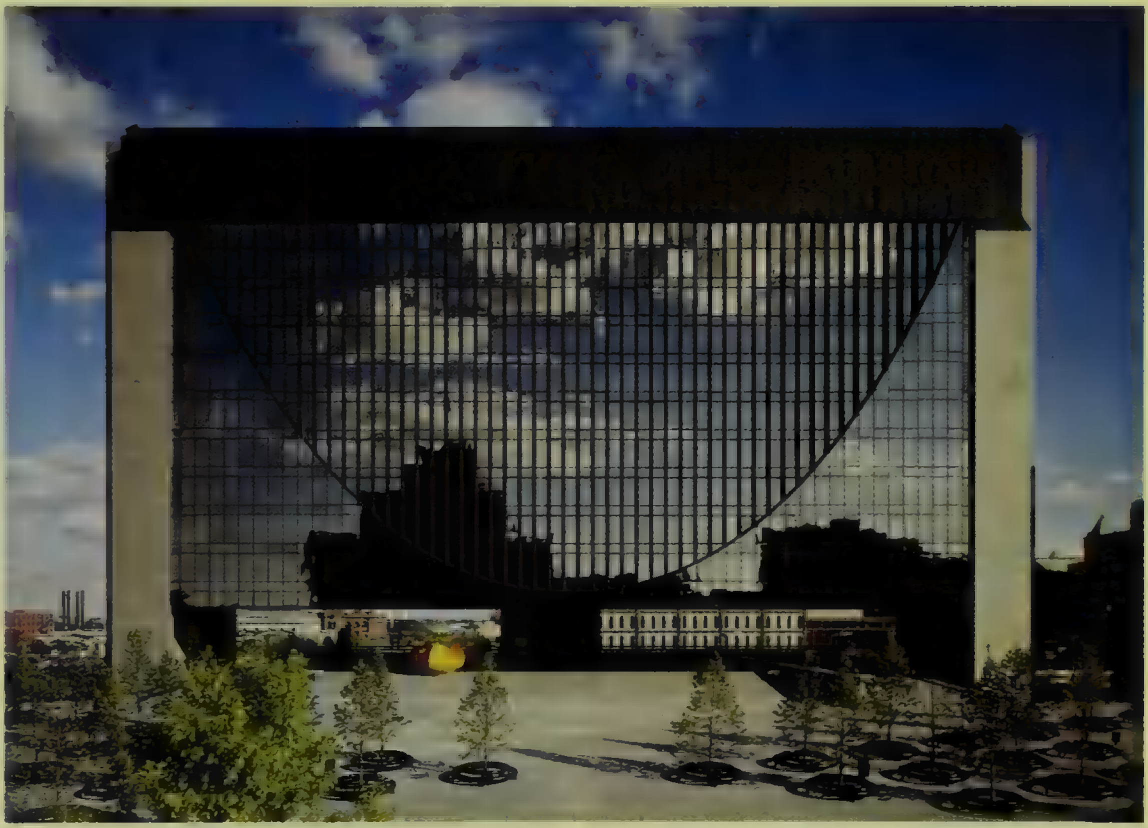
'all Street's woes

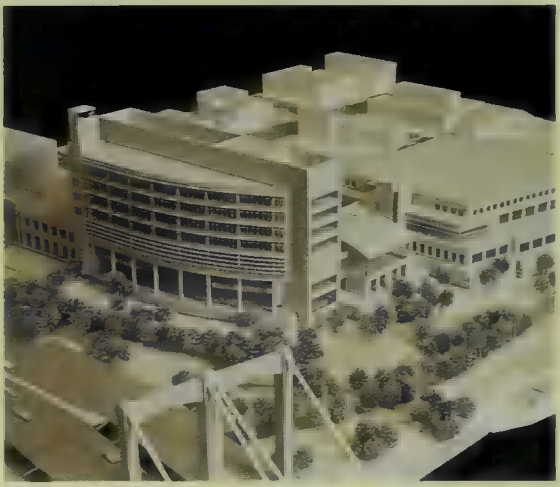
nce the stock market crash of 1987, lower
anhattan's huge financial business has
estructured and downsized drastically. Some
nancial businesses moved out of the city or
to Midtown, where trading floors could be
rved out of large-floor-plate buildings and
phisticated services added. Wall Street
ilding owners have fought back. At One
ew York Plaza, designed by William
escaze with Kahn & Jacobs, and completed
1972, a timely and expensive renovation
erted an utter disaster: at one point, the
1-million-sq-ft building was 80 percent
cant; now, that rate is two percent. "It was
den with asbestos and had outdated
stems," says Mitchell Ruden, a property
anager at Edward S. Gordon, a leading
mmercial-real-estate advisor and broker in
ew York. "In terms of its excess electrical
pacity and large floor plates, it was a classic
amond in the rough." The $100-million ren-
ation budget was "was definitely at the
gh end of commitment," he continues.

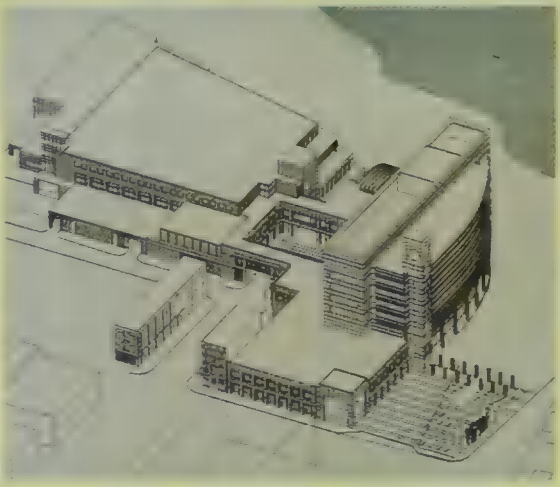
he building suffered from the problems of
at design period," explains Richard
ayden, who led the rehab for architect
vanke Hayden Connell. "It had all the basic
frastructure requirements, but it was not
inviting design." (The *AIA Guide to New
rk City* calls it "this all too prominent,
rk, brooding office tower.") SHC cleaned
d repainted the black metal curtain wall to
arly match the natural aluminum of the
cessed window surrounds. "It was not a
in replacement, but the effect was to
ange the presentation of the building,"
plains Hayden. To provide less formidable
cess to the building, the architects eliminat-
l a series of moats surrounding its plaza.
side, there was a massive asbestos abate-
ent program and an overhaul of building
stems, including the addition of redundant
ectrical power meant to reassure potential
vestment-banking tenants. "It's not just a
estion of demolishing what's in a building
d throwing it away, but of bringing out the
st of what's there," says Hayden. A Park
enue building—where rents are higher—
stified a more ambitious makeover (page 34).

so in lower Manhattan is 55 Water Street, a
70 Emery Roth behemoth that, at 3 million
ft, is second only to the World Trade

© Balthazar Korab



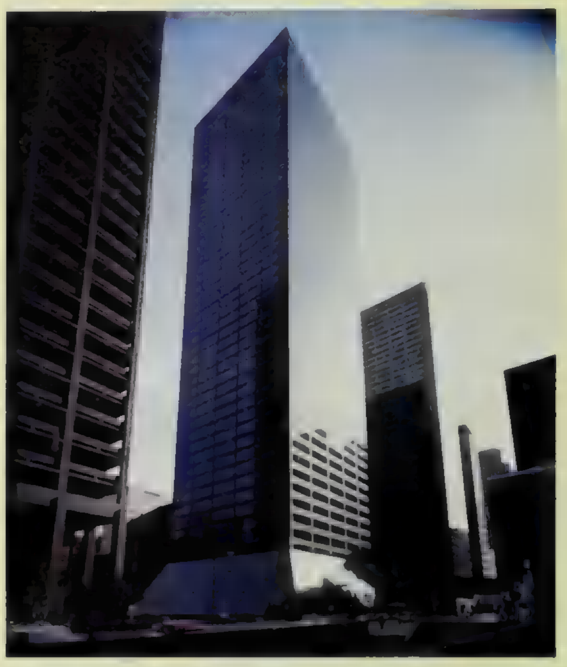


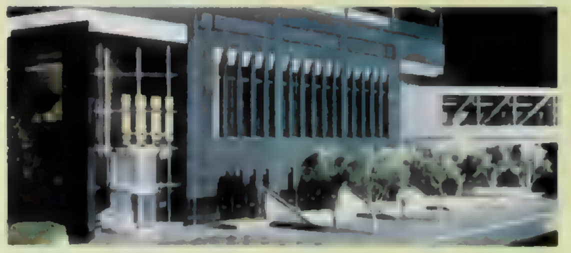


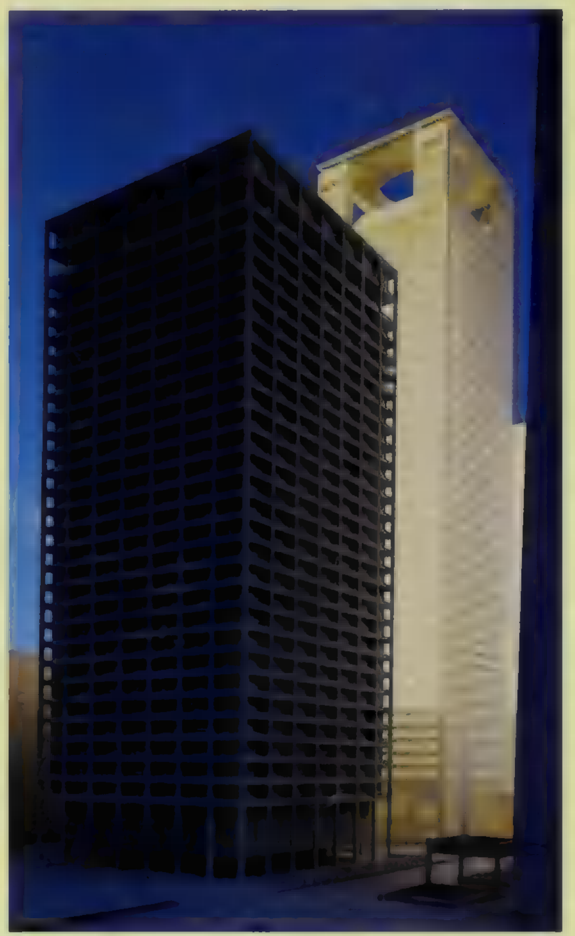
Can Birkerts's Bravura Landmark Be Saved?

Project: Federal Reserve Bank, Minneapolis
Architect: Gunnar Birkerts (original); HOK with Walsh Bishop Associates (replacement project).
Status: Original building: to be determined; replacement: slated for occupancy 1997.

The curtain wall of Birkerts daring 232,000-sq-ft office tower, suspended by a unique catenary construction, leaks and corrosion threatens the cladding long term (top). Asbestos insulation makes it very difficult to update the problematic radiant-ceiling heating and cooling system or update the electrical and fire-safety systems. The Fed also finds the building no longer suited to its original purpose. It first sought to abandon the building, threatening to leave the area if the city tried to forced it to stay. Once the agency rids of asbestos, however, it may again be viable for tenants. The bank will move to a nearby site (above), ironically, one that requires the demolition of some historic warehouses. The new facility is 12 percent larger, and is contextual rather than spectacular, shaped to meet the scale of surrounding buildings. The curve of the office block opens views to the Mississippi River. ■



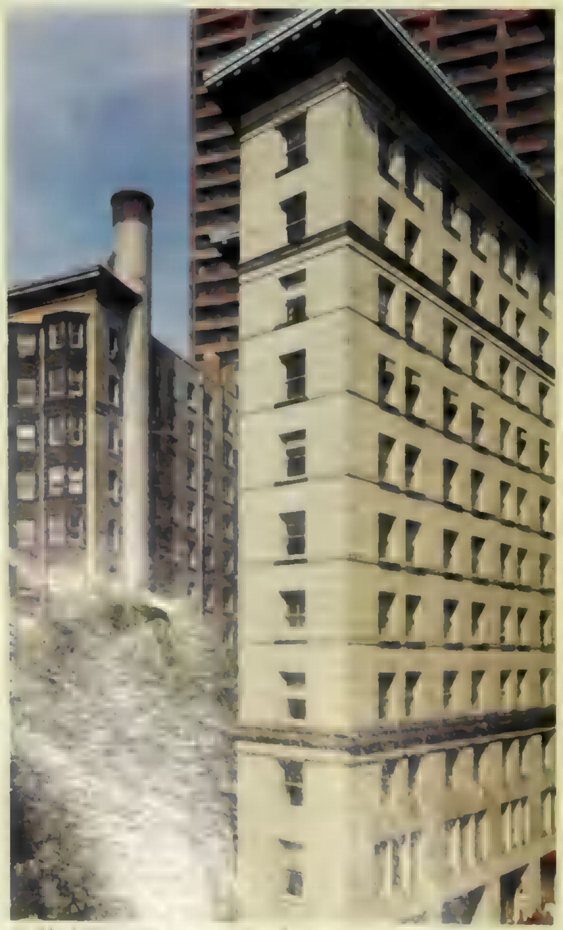




Cheaper to Stay Downtown

Project: 1111 Louisiana, Houston
Architect: JV3 (original architect); DMJM/Keating, rehabilitation
Status: In design

The client, Houston Industries, parent of the local electrical utility, had first hired Richard Keating's former firm to build a new headquarters outside Houston. (Keating has since joined DMJM.) Keating suggested that reworking one of downtown Houston's vacant highrises might prove cheaper and politically more acceptable. In the end the utility accepted Keating's reasoning. The rehab will give the 1.4-million-sq-ft tower's exterior a new architectural identity. A "skirt" of sloping glass (top far left) will be removed in favor of a granite clad base with a relandscaped plaza (bottom far left). The roof will be extended upward and lit at night to give the building presence on the skyline and disguise microwave equipment (near left). Besides asbestos abatement, ADA compliance, and life-safety improvements, a new CFC-free chilling plant and mechanical system will be installed. ■



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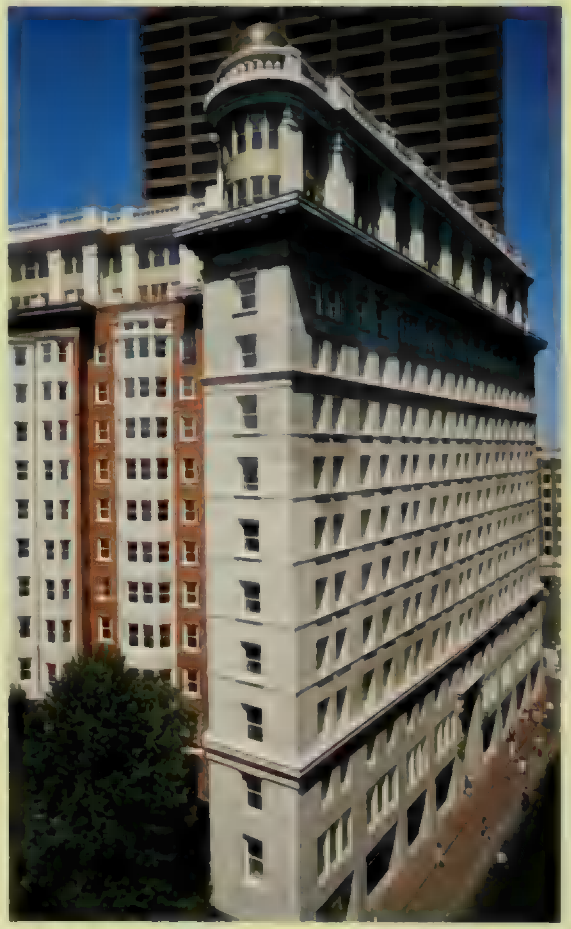


© Eric Roth

Competing with Class A Space

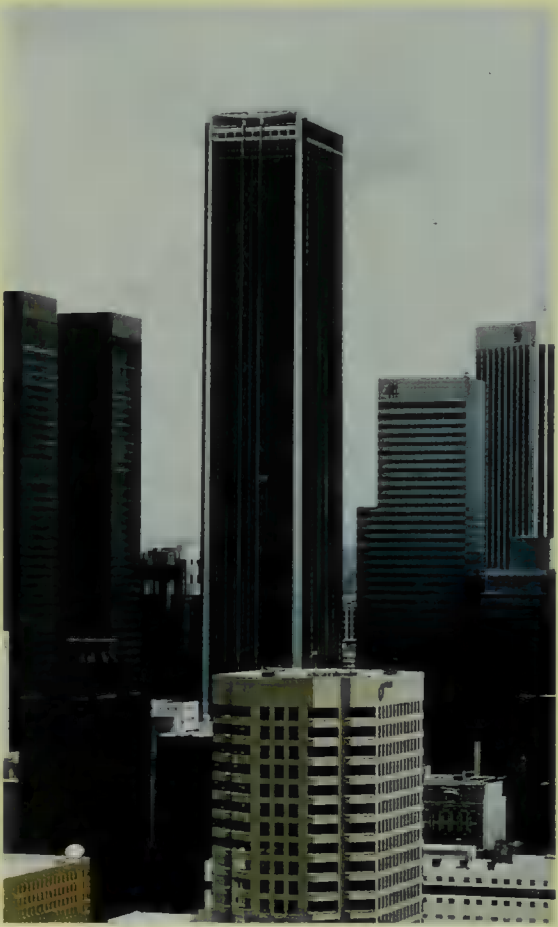
Project: 73 Tremont Street, Boston
Architect: Winslow Wetherell (original); CBT/Child Bertman Tseckares & Casendino, Inc. (renovation)
Status: Completed 1990.

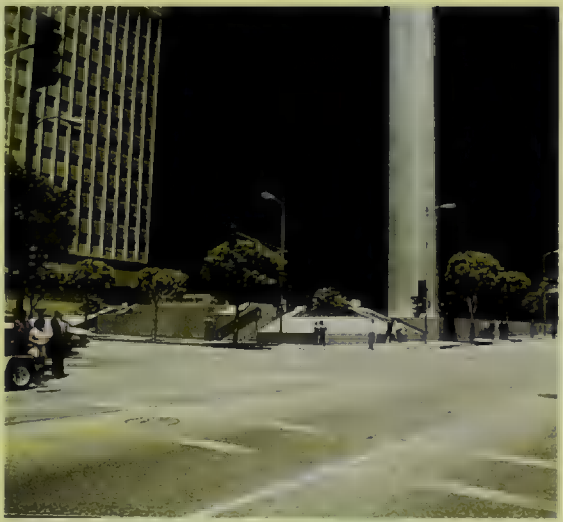
To bring the granite-clad U-shaped 1895 building up to contemporary standards ("before" photo, far left), the architect filled in the light court with a service core that could handle new high-speed elevators and mechanical shafts. Two floors were added above the old cornice (near left), and the basement was reconfigured for parking. "There had been multiple renovations over the century," says William Cinnamond, of J. P Morgan Investment Managment. "The redo was extremely costly. We were dealing with old elevators and electrical systems, leaky basement walls—you name it, we ran across it." One plus, of course, was that asbestos was scarce. The building, Cinnamond says, was among the first in Boston to be retrofit for fiber-optic capability. "Everything you would get in a new building is inside that tower, you're just in an 1895 shell." ■

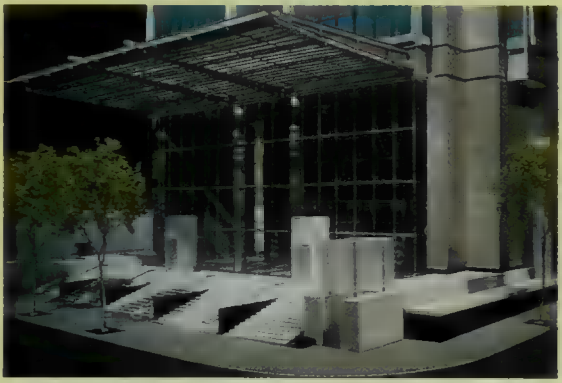
ill Waiting in Los Angeles

oject: First Interstate Tower, Los Angeles
chitect: Charles Luckman (original); 1JM/Keating (proposed rehab)
atus: Clients chose not to go ahead.

make rehabs of buildings like the First erstate Tower, a 1973 building of over one lion sq ft work, says Richard Keating, ou've got to get into the genetic code of the ginal and reweave it." He has yet to find formula for this building, the site of a nous high-rise fire. Keating proposed alter- ons to the sheathing that would have given building a greater sculptural presence, ile maintaining its shaft form. The top uld also be carved away. He proposed a v metal canopy to offer a more welcoming ry (bottom right), replacing its undistin- shed predecessor (top right). Along with bestos and ADA compliance problems, says ating, it has "awkward dimensions, with a ge core and four firestairs. You can redress looks—the lobby, skin, the top, but at the l of the day it's still an inefficient situa- n." The owners, he notes, aren't biting at $40-million cost of renovation. ■







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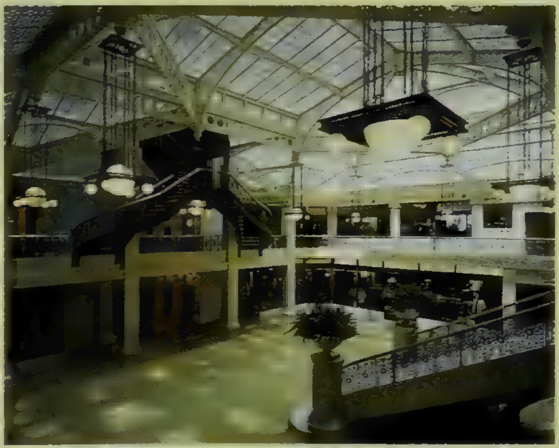
uplicating the Rookery's ccess

ojects: The Rookery and Reliance Build- s, Chicago.
chitects: Burnham & Root (original archi- t of both); McClier Corp. (restoration of okery) McClier with URM (restoration of liance).
atus: The Rookery restoration was com- ted in 1992; a phased restoration of the liance has begun.

e 300,000-square-foot Rookery was built as peculative office building. It departs from dern central-core layouts by wrapping elf around a light court. "The building lent elf fairly well to contemporary use," plains Gunnie Harboe, of McClier. "There s a tradeoff about removing a historic stair d relocating the elevator core to allow for en floor plans," he adds, but the designs re accepted by federal, state, and civic eservation agencies. The work included toration of the glass-roofed light court novated by Frank Lloyd Wright in 1907 ar right). Because the Rookery is gener- y viewed as a well-handled historic preservation project, the same team is now working on the Reliance Building (right). Built on spec for the medical professions and the clothing trades, its under-5,000-sq-ft floor plates are more commercially challenging. Numerous reuse plans have already foundered. An early plan to convert the building as housing, says Harboe, was "an abuse of the space, and wasn't consistent with its design." Now empty, the building will be returned to office use. Phased restoration has begun, starting with the interior. ■



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Seeking Salvation in Fashion

Project: American Radiator Building, New York City.
Architect: Hood & Fouilhoux (original).
Status: Empty; seeking a new owner.
Raymond Hood's small-scale 1924 masterpiece faces newly restored Bryant Park. After American Standard left the building in the late 1980s, the 22-story building was purchased by a Japanese investor at the height of the real-estate boom. The $43-million price proved prohibitive for remaking the building into a hotel, as planned. One real-estate expert say there is too little interest by "boutique" firms that might appreciate its high percentage of windowed offices. It's now for sale, and real-estate executives are hoping that the fashion industry that spreads south and west from the midtown site will be able to put the building's 9,000-sq-ft and smaller floorplates to good use, along with a grand showroom space on the ground floor. But any change to the building awaits plans by new owners, and then will likely require consent from the city's Landmarks Preservation Commission. ■

© Andrew Gordon

Park Avenue Makeover

Project: 320 Park Avenue, New York City
Architect: Emery Roth & Sons (original); Swanke Hayden Connell (rehabilitation)
Status: Completed June 1995.
Peculiarities of the zoning code made it possible to actually add square footage to a building that, had it been torn down, could not have been replaced by a similar-sized structure. Like many of the copycat Lever Houses that line Park Avenue, this building suffered from inadequate systems, a deteriorating curtainwall, and asbestos contamination. Since the location remains a top business address, the owner could afford to abate the asbestos, rework certain floors (adding a ziggurat top to distinguish it from neighbors), and strip cladding to steel, replacing the curtainwall with one that meets modern energy-conservation standards. By fully sprinklering the building, redundant fire stairs could be removed. The architects provided air-handling rooms on each floor, offering additional hvac flexibility for tenants, and reduced duct sizes—a necessity given the limited ceiling heights. ■

Center in Wall-Street-area bulk. The current owners, a pension fund, chose a thorough systems upgrade and asbestos abatement of the partly occupied building rather than a full-scale redesign. (Kohn Pedersen Fox drafted plans for both proposals.) The current work also includes a revamped plaza and lobby, and an elevator modernization.

Barry Nealon, a vice president with the international real-estate firm Jones Lang Wootton, which was brought in to evaluate the building's prospects after a default by the Olympia & York real-estate empire, described the decision to postpone a full makeover in pragmatic terms. "The aim is to be a low-cost space provider. Glamorous headquarters are not the driving force in the marketplace. Space users are not looking for glitz and image as in the 1980s, but they are extremely demanding of technical services."

The financial business is almost unique in the density of computer and telecommunications support needed. A single trader, for example, may face a battery of computer screens and a handful of telephone lines. Wiring needs often call for raised floors, and the heat generated by computers raises cooling loads hugely. The low floor-to-floor height of many 1950s and 1960s buildings severely limits the technology that can be accommodated. Prewar buildings often have higher ceilings, but it can be difficult to find vertical chase space or to retrofit cable-handling ducts or raised floors.

Indeed, it is the sheer quantity of what is perceived to be unusable floor space in Wall Street that threatens the viability of lower Manhattan as the nation's financial center, according to owners and managers. They're now discussing zoning changes that would permit demolition of many of the area's landmark 1920s towers, or their conversion to housing. The City of New York hopes to keep businesses downtown with tax breaks, improved services, and updated transportation links. Nor is Wall Street alone. Miscovich indicated there is considerable space in Orange County, Calif., and Denver that goes begging because tenants find it less costly to build-to-suit at urban edges or (when linked by sophisticated telecommunications) to move to small, low-cost cities. (Boise and

It's often up to architects to demonstrate for owners (and the increasingly short-term-oriented local government) that too much new construction too soon can bring problems of its own.

Sacramento have benefitted from businesses locating back-office and light manufacturing under one roof.)

Chicago Hope

Though not on Wall Street, the American Radiator building's struggle for solvency (opposite) isn't much different than what faces older towers in Lower Manhattan. In Chicago, however, the restoration of the Rookery, a pioneering office building completed in 1888 by Burnham and Root, shows that prewar buildings aren't necessarily dinosaurs. The team that made the Rookery work is now trying to work its magic on the Reliance Building, a much-loved landmark, where numerous restoration efforts have failed (previous pages).

The differences between the Rookery and the Reliance are instructive. A developer, the Baldwin Co., acquired the Rookery on the default of its owner, Continental Bank, and thus was able to control the amount of money spent as well as the time of construction. The Reliance Building has waited much longer for salvation. It is owned by the city of Chicago, but is being redeveloped by the Baldwin team, including a design-build joint venture, a partnership of McClier Architects and UBM, an engineering and contracting firm. The city's procurement processes limit the developers' options and slow the pacing of contracting work. Also, no tenants have yet been found for the building.

Taking the long view

Though pinched by falling office rents in Boston, the renovations and additions to the 1895-vintage 73 Tremont Street brought the well-located building up to 90 percent occupancy (previous pages). The bank-owner took a long-term view when it began renovating the 11-story building in the late-1980s. At that time, leases seemed to be going in only one direction, and profit-making rents of $38 per sq ft seemed close at hand. Today Boston rents hover in the mid-$20s.

According to William Cinnamond, Jr., a vice president at owner J.P. Morgan, the bank stuck with its strategy even when the bottom fell out of the office market and the top blew off the project budget. With part of its investment written down, the building is performing at current rents. "We can't expect it to compete with a brand-new tower in the heart of the central business district," says Cinnamond, referring to conventional expectations for big floors, views, and newness. "But some appreciate the charm and character and attention to detail in a building like this."

Reserving judgment

One building that continues to defy the best efforts of preservationists and adaptive reuse proponents while summing up the frustrations of its users is the Federal Reserve Bank of Minneapolis, designed by Gunnar Birkerts and finished in 1973 (page 31). "Everyone guessed wrong for the program 25 years ago," says Tom Martinson, an architect and planner hired by the bank to evaluate the building. "The sense was, from the brightest guy on down, that this was going to become a checkless society. While the bank was careful to program for expansion capability, they guessed for expansion in the wrong areas. Now there are more checks than ever, and there's no end in sight." At one time it appeared the Fed would simply abandon the building, but local activists and the AIA persuaded the agency to evaluate options for re-use.

Tenants say they prefer newer buildings, "but some appreciate the charm and character and attention to detail in a building like this."—William Cinnamond on 73 Tremont Street

Since even demolition would require the abatement of the asbestos (at Federal Reserve cost), a 1993 report prepared pro-bono by the chapter, suggested that retention by the Fed was a viable option, with the expanded check-handling operations relocated. The agency didn't accept the recommendation, but it has agreed to cooperate in seeking other civic uses that would prevent demolition (otherwise a real likelihood if the prominent site is simply sold to a developer). The most appealing alternative is to tie the building (tenanted to office users) to a proposed public library and light-rail transit hub. "This building does not neatly fit into any protection categories," notes Denny Probst, an architect who headed the task force. "The Federal Reserve is looking at moving in 1996-97, and we offered some options to keep it in the skyline." Although the building is too young to qualify for listing on the National Register of Historic Places, a report has been prepared requesting that the 50-year age requirement be waived. "If one could look at putting a whole series of these projects together, " says Probst, "it is an opportunity to do something fairly grand."

Whole districts up for grabs?

As Class A vacancy rates in many markets drop to where new construction is a genuine possibility rather than a distant hope, it's often up to architects to demonstrate for owners (and the increasingly short-term-oriented local government) that too much new construction too soon can bring problems of its own. In Dallas and Houston, the brash mega-growth culture of the 1970s and '80s made it imperative for companies to build their own skyscrapers and politically incorrect to recycle older buildings. As space absorption flattened, then died, developers turned to a parasitic strategy, siphoning tenants out of older buildings to fill new ones.

In the mid-Wilshire section of Los Angeles, says ISI's Miscovich, adaptive reuse of unrented Class C office space to residential or educational use is now seriously considered. Still, the costs are daunting, suggesting that more attractive tax treatment, or other government intervention may ultimately be required. New York City's fight to retain Wall Street's viability is a reminder that simply letting aging building stock decline can ultimately threaten the future of an entire office-building district. ■

Does Saving Artifacts Mean Losing the Building?

Some preservationists fear that sophisticated hvac systems proposed for Independence Hall could compromise the building's historic fabric.

By Mubarak S. Dahir

Students of American history know that it wasn't only redcoats that menaced the country's nascent independence, it was also the weather: barricaded in secrecy behind the closed windows and locked doors of Independence Hall, the Founding Fathers had to cope with the sultry Philadelphia summer. The situation sharpened already high tensions among them and nearly scuttled the writing of the document that would win the muggy hall its place in history.

When architects and engineers for the National Park Service last year submitted their proposed plans to update Independence Hall's mechanical systems, they found that the question of the building's interior climate was once again creating controversy. The $12-million scheme called for updating air-conditioning, ventilation, heating, humidity control, fire safety, electrical, plumbing, and security systems, last redone in 1971. (The architects are the Vitetta Group, of Philadelphia.)

Proposal "too intrusive"

The city owns the historic buildings—it purchased them back in 1818—and the National Park Service (NPS) leases and manages them. According to an agreement between the two, any changes to the buildings and grounds must be approved by both parties. But when the Park Service last year offered up its proposal, the architecture committee of the city's historical commission rejected it.

"We were concerned it was over-designed and intrusive," says Arlene Matzkin, an architect and chairwoman of the city's architectural committee. "We didn't want to lose any original fabric of the building, and we felt the original plan would have put the building at too much risk." Richard Tyler, the Philadelphia Historical Commission's preservation officer agrees. "The Park Service was trying to put more of a museum environment, which entails putting in more mechanical equipment and ductwork. But we question whether that kind of environment could be created in such a building, and indeed whether it should be."

Mubarak S. Dahir is a freelance writer based in [illegible], New Jersey.

Independence Hall is presently cooled via two air-handling units located in the building's basement. Typical hvac systems supply air through the ceilings and exhaust air through low returns. The existing system is considerably less sophisticated (opposite).

In rejecting the Park Service proposal, the city cited concerns over the number of surfaces penetrated by ductwork and the potential for leakage or fire from the new air handlers. But the biggest fear was that museum-like environmental conditions would cause condensation in the building's walls and timbers that could lead to serious decay and rot. It is not uncommon in Philadelphia for the outdoor relative humidity to drop to 15 percent during the winter. The low humidity tends to draw the relatively higher interior moisture toward the exterior, where it may condense on or within the cool, uninsulated historic walls.

Consistent conditions key for artifacts

Thomas Taylor, the architectural collections manager and chief architectural conservator for Colonial Williamsburg, has seen the conflict before: "Materials have ambient levels of humidity and temperature they do best in, and often there's a real conflict between providing an environment that keeps a collection secure but doesn't risk damage to the building structure." The most vulnerable materials in Independence Hall include the paper of old maps, the wood and textiles of antique furniture, and the silver of the inkstand used to sign the Declaration of Independence. Karie Diethorn, curator and chief of the museum branch of Independence National Historic Park, places the ideal temperature and humidity for the collections at between 68 and 70 deg F and between 45 and 60 percent relative humidity.

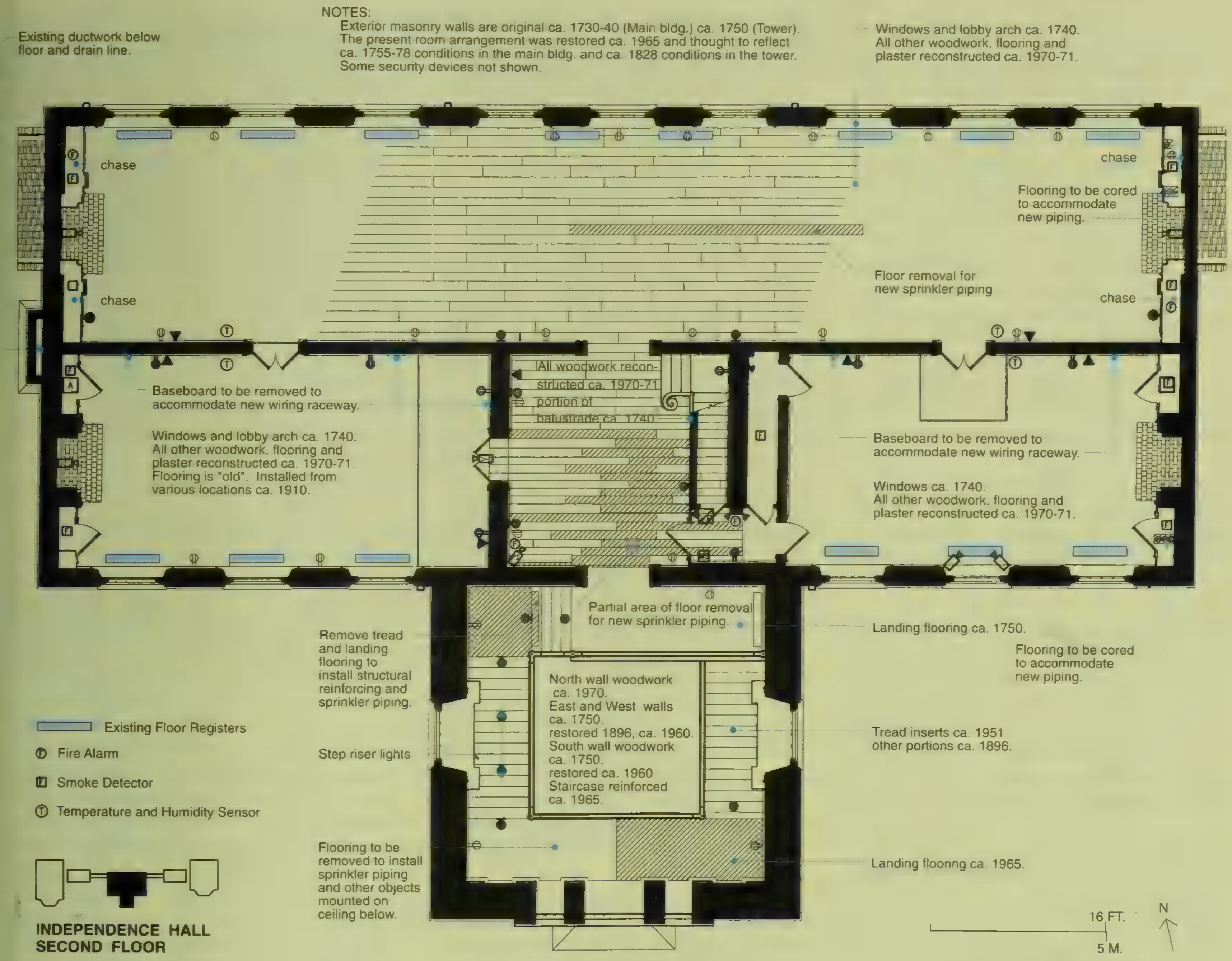
In seeking a compromise, the city sought a performance standard: there may be no water condensation on the inside of windows or window sashes at any time. The plan finally agreed upon was to replace the existing air-handling units in the basement with modern, more-efficient, larger-capacity units. No ductwork will be added, but the surface area of existing vents and grilles may be enlarged. William Brookover, chief historical architect for Independence National Historic Park, is concerned that the larger outlets won't do the job because more air traveling through the same duct system may prove too noisy. Brookover says the NPS hopes the revised design will maintain a humidity range of from 20 percent in the winter to a maximum of 45 percent in the summer, and from a low of 60 deg in the winter to a high of 78 deg in the summer.

© Eastern National

Diethorn, the Hall's curator, says she is willing to accept the compromise because it reduces the *fluctuations* in humidity—the most important environmental consideration—to no more than four percent for any given month. Construction will begin in May.

Randall J. Biallis, the chief historical architect for the NPS in Washington, D.C., believes there is still going to be as much as a 15-percent differential in relative humidity in various parts of the building at any given time. He adds that it has even been suggested that some of the museum's more sensitive objects may have to be replaced by replicas in order to preserve them properly. Diethorn calls that "an extreme act that hasn't been proven necessary to me yet. We've always maintained that people come here to see the real thing. A stage set is not an experience [for the visitor] with integrity."

Diethorn will monitor the collections for damage for three years following the installment of the new hvac system. Engineers will also collect data on the interior conditions of the building and on the structure itself. "We might come back to the city and try to convince them to go forward with the originally proposed hvac plan," says Brookover. "We won't have the final answer for years." ■


NOTES:
Exterior masonry walls are original ca. 1730-40 (Main bldg.) ca. 1750 (Tower).
The present room arrangement was restored ca. 1965 and thought to reflect ca. 1755-78 conditions in the main bldg. and ca. 1828 conditions in the tower.
Some security devices not shown.
Existing ductwork below floor and drain line.
Windows and lobby arch ca. 1740. All other woodwork, flooring and plaster reconstructed ca. 1970-71.
chase
chase
chase
chase
Flooring to be cored to accommodate new piping.
Floor removal for new sprinkler piping
Baseboard to be removed to accommodate new wiring raceway.
Windows and lobby arch ca. 1740. All other woodwork, flooring and plaster reconstructed ca. 1970-71. Flooring is "old". Installed from various locations ca. 1910.
All woodwork reconstructed ca. 1970-71
portion of balustrade ca. 1740
Baseboard to be removed to accommodate new wiring raceway.
Windows ca. 1740. All other woodwork, flooring and plaster reconstructed ca. 1970-71.
Partial area of floor removal for new sprinkler piping.
Landing flooring ca. 1750.
Flooring to be cored to accommodate new piping.
Remove tread and landing flooring to install structural reinforcing and sprinkler piping.
North wall woodwork ca. 1970. East and West walls ca. 1750. restored 1896, ca. 1960. South wall woodwork ca. 1750. restored ca. 1960. Staircase reinforced ca. 1965.
Step riser lights
Tread inserts ca. 1951 other portions ca. 1896.
Flooring to be removed to install sprinkler piping and other objects mounted on ceiling below.
Landing flooring ca. 1965.
Existing Floor Registers
Ⓕ Fire Alarm
Smoke Detector
Ⓣ Temperature and Humidity Sensor
INDEPENDENCE HALL
SECOND FLOOR
16 FT.
5 M.
N

Today, galvanized ducts supply ir to the first and second floors of Independence Hall only hrough floor grilles (blue in lan above). Randall J. Biallis, he chief historical architect for he National Park Service in Washington, D.C., complains hat while the existing 1960s design "is sensitive to the hisoric fabric of the Hall, it's flawed from an hvac standpoint." With no return-air ducts from the second floor, he explains, "air is artificially forced down the stairs to the first floor for return." The arrangement limits the quantity of air that can be circulated, and distribution is inadequate. Thus, it is much more difficult to consistently maintain the temperature and humidity deemed essential to conserve the artifacts.

With the constraints of the existing hvac system, "There are pockets in the building where there are dramatic swings in both temperature and humidity," Biallis explains. "We wanted to improve the situation for the collections by eliminating or at least minimizing those air pockets, without hurting the structure of the building." To serve the second floor, the Park Service had proposed adding two additional air-handling units—with new supply and return ducts—to the steeple.

Simplifying Single-Ply Roofs

Though the technology of single-ply roof membranes is now proven, materials and installation still merit close design attention.

By Dana Holbrook

Single-ply roofing was introduced in the United States about 20 years ago to provide a more consistent, reliable alternative to multiply built-up roofing (BUR). Because single-ply membranes are factory-made, they offer better quality control than BUR, which is essentially fabricated in the field. Single plies also go on quickly, offer a choice of attachment methods, provide better resistance to ultraviolet light, and are workable in cold weather. Unlike BURs, single plies are flexible, letting the substrate move somewhat without splitting or cracking the roof. As popular as they are, single plies are not trouble free. The redundancy innate to BUR's multiply installation, for example, remains an advantage.

There are two broad classifications of single plies: thermoset and thermoplastic. Within these are a range of membrane formulations and ingredients distinct to each manufacturer. Some known sensitivities are listed on the chart opposite, but manufacturers should be consulted before specifying to make sure materials are compatible with the deck, the insulation and—if re-roofing—with the existing membrane. The recommended fastening system must also be suited to the deck and in conformance with local codes (though research is finding some codes don't calculate wind uplift conservatively enough).

All single plies must meet minimum standards set by the ASTM on low-temperature flexibility, meaning membranes can't break or crack when exposed to temperatures as cold as -40 F. Thermosets perform particularly well in extreme cold. The membranes come in thicknesses ranging from about 30 mils to 60 mils. In general, the thicker ply is more durable, but there are many other variables, such as installation technique and flashings, that affect performance. For instance, an exposed application may require a thicker membrane than an application that's ballasted. However, it's wrong to assume that one type of 60-mil is more effective than a 30-mil version of another. Because formulations vary among the different manufacturers, one company's [illegible]-mil product may be as effective as another's 60 mil. You can buy fiber-reinforced versions of several membranes for use with mechanical fasteners; the additional strength helps prevent tear-outs. While some membranes, such as CSPE, are inherently fire-retardant, others can be specified in FR versions. Ballasted systems are considered more fire resistant than exposed membranes.

The materials cost of single plies is usually higher than BUR, but the type of installation influences which has the lowest installed cost. Many are also more susceptible to punctures and damage from foot traffic than are BURs.

Modified-bitumen roll roofing, which is frequently classified as a single-ply membrane, occupies a gray area in the world of roofing materials. Like BUR, modified bitumen has an asphalt or coal-tar base sheet. But the sheet is modified with polymers that give it strength and flexibility more akin to a single ply. Since the attachment methods and physical properties of modified bitumen are so different, this article focuses only on thermoset and thermosplastic membranes .

Thermoset single plies

The term thermoset refers to a class of materials made from synthetic-rubber polymers that cure or vulcanize during the manufacturing process to form chemical bonds that give them elasticity and strength. These bonds are irreversible; that is, the materials won't break down under the extreme temperatures found in the field.

There are three kinds of thermosets: EPDM (ethylene propylene diene monomer), neoprene, and CSPE (chlorosulfonated polyethylene, often referred to as Hypalon, a brand of CSPE made by DuPont.) CSPE differs from the other two thermosets in that it cures naturally upon exposure to weathering. Once cured, CSPE has the same strength and elasticity as EPDM.

EPDM is the most commonly used single ply, accounting for about 35 percent of the single-ply market, according to the National Roofing Contractors Association. By comparison, CSPE, a more expensive membrane, claims about 2.5 percent of the commercial market. Neoprene, popular in the early days of single-ply, is now seldom used.

Thermosets also differ from thermoplastics in their seaming properties (see chart). EPDM requires some type of adhesive to unify the sheets, either contact cement or pressure-sensitive splicing tape. When contact cement is used, the roofer rolls or paints adhesive onto the laps and carefully joins the two sides. Since the cement forms an instant bond, trying to adjust the seams afterward is almost impossible without damaging the membrane. Seaming tape was introduced about five years ago in response to clean-air regulations restricting the use of adhesives containing volatile organic compounds (VOCs). Neater and easier to apply than contact cement, tape is rolled onto one side of the seam, the release paper is removed, and the laps are rolled into place. In both cases, the membrane must first be cleaned to allow full adhesion.

EPDM typically is black, tan, white, or gray. CSPE is almost always white, although, like most membranes, it can be made in custom colors if an order is very large. Lighter colors are reflective, making them more energy-efficient when cooling loads are high. But they also get dirty quickly.

Both EPDM and CSPE are compatible with just about any existing roofing product, which makes both suitable for re-roofing. EPDM must not be exposed to fuels or aromatic solvents. The membrane absorbs these, causing it to swell and soften. CSPE is also sensitive to certain substances, particularly to some hydrocarbons. In all cases, the extent of the membrane's vulnerability depends on the concentration of the chemical and the ambient temperature. For this reason, regardless of the membrane's advertised properties, most manufacturers recommend that they be consulted about any prevalent contaminants.

Thermoplastic single plies

The list of thermosplastic single plies is an alphabet soup of chemical abbreviations, though the most common thermoplastics are PVC (polyvinyl chloride) and PVC blends. Among the blends, the most popular formulations are CPA (copolymer alloys) and EIP (ethylene interpolymer), along with TPOs (thermoplastic polyolefins) a fairly new thermoplastic. All are available in a range of

Dana Holbrook, based in Westport, Conn., writes frequently on building technology.

Materials Issues

Membrane Type	Seaming	Chemical Compatibilities	Chemical Sensitivities
Thermoset single plies			
EPDM	•Pressure-sensitive splicing tape or contact cement •Heat or solvent welding	Acids, alkalis, animal and vegetable oils, oxygenated solvents	Gasoline and other fuels, aromatic solvents
CSPE	Heat or solvent welding	Most existing roof products	Some hydrocarbons
Thermoplastic single plies			
PVC	Heat or solvent welding	•Compatible with a wide range of industrial chemicals •Resistant to bacterial growth	•Bitumen •Extruded and expanded polystyrene
PVC blends	Heat or solvent welding	Vary widely; often include oils, greases, animal fats, bitumen	Aromatic hydrocarbons
TPO	Heat or solvent welding	Not available	Not available

Attachment Issues

	Ballasted	Fully/partially Adhered	Mechanically Attached
Deck	•Size deck for ballast live load •Near-to-level roofs only	•Insulation must be attached to deck •Low-slope acceptable	•Fastener patterns must be coordinated to deck structure (especially metal) •Method not suited to precast decks
Wind Uplift	•Subject to ballast scouring •Flying ballast can damage adjacent buildings •Membrane can act like airfoil and "balloon"	•Insulation attachment must be sized for anticipated wind loads •Insulation tension strength may become critical	Fastener loads may require thicker deck than combination of dead and live loads alone
Rooftop Traffic	Pavers may act as ballast and walkway pads	Needs additional layer of material for walkways	Needs additional layer of material for walkways
Appearance	Neat appearance	Seams may be unattractive	Pattern of fasteners may be unsightly

Single-ply membranes: *Today there are fewer readily available membrane types. Materials to which the membrane is "sensitive" may cause degradation.*

thicknesses, colors, and sheet sizes. Thermoplastics contain plasticizers or other compounds that give them flexibility. How well they retain these elements determines their ability to maintain that flexibility over their service life.

While seams can be heat- or solvent-welded, heat-welding is environmentally safer, neater and more reliable; the seaming process is less likely to be compromised by water or contaminants in the solvent. The ability to fuse the membranes is an advantage in detailing the roof.

Flashings can be purchased pre-coated with a vinyl film so they can be heat welded to the membrane, providing a better bond at these critical junctures than gluing membrane to metal. The heat welding machine, which generates temperatures of up to 800F can be moved up and down the seams quickly. A hand-held machine can direct heat at specific areas, making detailing and spot welding easier. Thermoplastics are susceptible to a range of contaminants, so check with the manufacturer first. PVCs, for example, react to bitumen, asphalt, and coal tar. They also cannot be laid over extruded or expanded polystyrene because, at high temperatures, the plasticizers break down the polystyrene. If the two must be paired, keep them apart with a separator sheet.

Installation Techniques

There are five basic installations for single plies: ballasted, mechanically attached, fully adhered, partially adhered, and protected or inverted membrane. Most membranes can be installed with any of the techniques. Which installation system is best depends on decking and insulation materials, the amount of weight the structure can support, local codes, costs, manufacturer recommendations, and the roof location. All single plies are resistant to wind uplift, but many have failed where designers didn't anticipate the actual strength of winds.

•*Ballasted systems* are the most common because they're inexpensive and easy to lay. Membranes are loose laid and glued at the perimeter. Ballast, consisting of rocks or heavy or lightweight pavers, is spread evenly over the top. Ballasted systems are aesthetically appealing because they offer uniformity of appearance—seams and patches are hidden beneath the ballast. Different-colored gravels or pavers can be used to create designs. But ballasted systems are unsuitable for a roof with a slope greater than 2:12 and the roof must be able to support 10 lbs. or more per square foot. In high-wind areas, ballast can be scoured off, resulting in exposure of the membrane (which may then "balloon" off the roof) and damage to adjacent structures (from flying gravel).

•*Mechanical fasteners*—galvanized-steel or aluminum battens or plates in various shapes and sizes—permit the membrane to float freely between them, allowing greater movement between the membrane and the substrate.

•A *protected membrane* is one in which the waterproofing sheet is installed beneath the insulation. Relatively expensive to install, the system is useful on a roof where foot traffic is heavy or where the membrane must be protected from other types of abrasion.

•*Fully adhered* systems use either water- or solvent-based adhesives spread in an even film to fasten the membrane to the deck. Self-adhesive sheets are available, but they're expensive and require a very clean substrate for good adhesion. Fully adhered systems are best for steeper roofs.

•*Partially adhered* systems are similar to fully adhered but instead of coating the entire membrane, the adhesive is laid in ribbons, allowing greater sheet movement and saving on the cost of adhesive. Because the adhesive used is temperature-sensitive, cold-weather installations can be a problem.

Almost every membrane comes with a range of pre-molded flashings for corners and penetrations as well as unmolded material for use in unusual conditions. If designers fail to deal with such non-standard areas as roof divisions meeting parapets (as too often happens), roofs may fail. ■

Making a Drawing into a Presentation

By Steven S. Ross

Need a rendering of your project? Or perhaps a computerized substitute for a mood-setting hand-painted image? If you've drawn in 2D, you're out of luck as far as CAD is concerned. Many 3D and quasi-3D CAD packages will accommodate you, of course—but only if you've drawn the project near-perfectly. In the real world, architects report having to take files to custom "service bureau" shops to get proper renderings. Or you may have to spend hours tweaking your CAD drawing, and hours waiting for the computer to render it.

It is not surprising, then, that many offices have turned to non-CAD graphics software to doll up CAD drawings—especially 2D drawings—for presentations or brochures. Such software can render them, and even add a bit of the pizzazz that used to be done by first-rate illustrators. One common package for this task is the inexpensive Aldus PhotoStyler, which is not being updated. (Aldus and Adobe have merged; Adobe Photoshop is the surviving product, out in new versions.)

Color printouts on large-format printers from vendors such as Hewlett-Packard, Summagraphics, and EnCAD are stunning. Even printouts from $300 A-size units (HP's color DeskJet series, and others from Canon, Star, and so forth) can turn a client's head.

You do have to take care. Non-CAD software tends to rely more on pixel-based graphics to form an image than on vector-based graphics (where each element of a drawing is a mathematically defined entity, not simply a collection of dots). Thus, when you import a CAD file into non-CAD software, it loses some "intelligence" (especially 3D intelligence) and gains graphic flexibility.

This month, we look at a cross-section of software [illegible] packages. They range from [illegible] drawing package that is CAD-[illegible]), Picture Publisher, and [illegible] (both true "paint" pack-[illegible] cial eff[illegible] Kai's Power T[illegible] effect[illegible] and Images Incorp[illegible] compr[illegible] huge files that [illegible] for [illegible] apparent resolu[illegible] under Windows, and some ru[illegible]

Micrografx Designer 4.1 TE

Vendor: Micrografx, Inc., 1303 E. Arapaho Rd., Richardson, TX 75081, 800/261-6123. 214/234-1769.
Price: $695; upgrade from Designer 4.0 is $49.95, from 3.x, $149.95.
Equipment required: Windows-capable computer (486 CPU or higher recommended; 386 CPUs and 486SX require math coprocessor;) 8MB of RAM (16MB recommended). Full installation takes 32MB of disk space; on-line tutorial, fonts, and clip art are on CD-ROM disk.

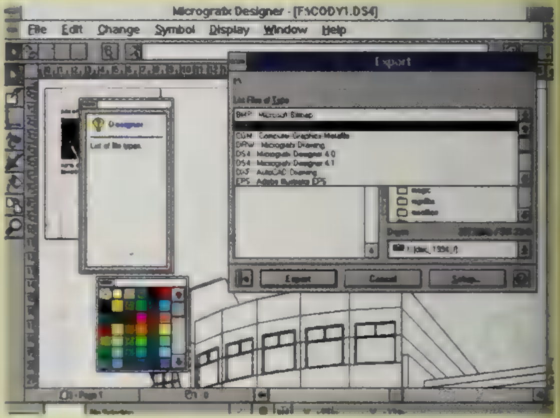
Designer is a technical illustration package, a cross between true CAD and simpler, pixel-based "paint" programs. Its strength is a fairly intuitive interface, and about 40 import filters—including robust DXF and IGES as well as AutoCAD RND (AutoShade). Thus, it can pull in wireframe or 2D work from CAD packages—ready for the addition of color, human images, and so forth.

There's also a flexible dimensioning tool, good for adding explanatory detail to marked up drawings. (Adobe Illustrator is the biggest competitor in the professional market.)

In general, you will want to pull files into Designer and work on them. But you will not want to re-export back to CAD. The exceptions would be bitmaps you may be using as textures or backgrounds, or rough sketches you start with, then transfer to CAD for hard-line drafting. This is because separate layers in CAD drawings are generally collapsed into one layer (you can still edit separate objects, however). You can string images together in a slide show as well.

There's an amazing "autotrace" module that turns bitmaps into vector images. One use not discussed in the manual: you can take funky TrueType fonts (the world is full of them) and turn them into vectors for easier addition to CAD drawings.

Designer is another good reason to buy a CD-ROM drive. There's plenty of clip art (including human figures and some architectural symbols such as trees, doors, and windows) and a tutorial on the CD.


Micrografx Designer - [F:\CODY1.DS4]
File
Edit
Change
Symbol
Display
Window
Help
Export
List Files of Type
BMP Microsoft Bitmap
CGM Computer Graphics Metafile
DRW Micrografx Drawing
DS4 Micrografx Designer 4.0
DS4 Micrografx Designer 4.1
DXF AutoCAD Drawing
EPS Adobe Illustrator EPS
Export
Cancel
Setup...

DXF file after importation into Micrografx Designer 4.1 TE. This is what happens when the original DWG file was locked—you can see it but not edit.

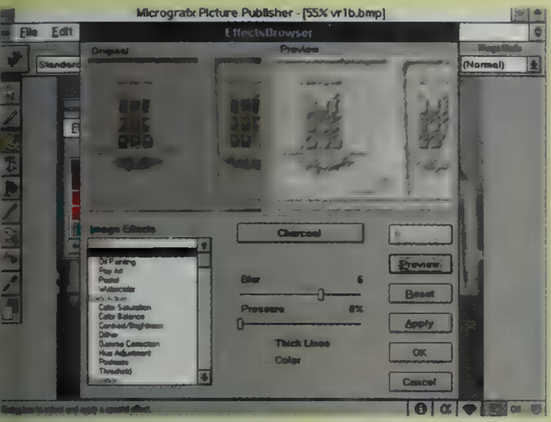
Manuals: Adequate, large paperback reference and tutorial. On-line help is installed from floppies, but even better help on-line is available if you use the CD-ROM disk that comes with the package.
Ease-of-use: Excellent with 16MB of RAM. Pokey at 8MB—especially files containing loads of bitmaps.
Error trapping: You can undo up to 100 operations (the default is 5, but it can be reset). There's no automatic save—understandable for a package that handles huge files, but dangerous with Windows 3.1. Save in package's native (DS4) format first for safety, then in standard formats such as BMP. In general, if the original CAD file was locked when you DXF out, the resulting image may be viewed but not edited inside Micrografx Designer.
300 *on Reader Service Card*

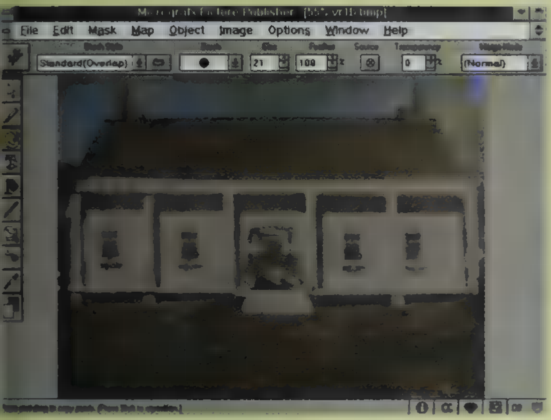
Picture Publisher 5.0

Vendor: Micrografx (see above for address).
Price: $395 for CD-ROM only version, $595 for disks; upgrades from older Picture Publisher versions (including LE) are $99.95 for CD, $149.95 for disks.
Equipment required: Windows-capable computer (486 or higher strongly recommended), 4MB RAM (8MB or more strongly recommended). Full installation takes about 15MB of disk space. CD-ROM drive strongly recommended.

Picture Publisher 5.0 is one of a select group of professional-strength pixel software pack-

Need to do a rendering but you only have 2D CAD? Non-CAD graphics software can be the answer to your quandary. Here are five packages you should take a look at.




Micrografx Picture Publisher
File Edit Mask Map Object Image Options Window Help
Standard(Overlap)
(Normal)

Preview box in Picture Publisher (top) llows easy viewing of special-effects look. This is a conversion to charcoal drawing. Above: "Pastel" effect applied. Other pseudo-renderings are watercolor, oil painting, and harcoal sketch. We could have used a DXF wireframe, with sections in color.

ages that massage images for publication, but hat are not too hard to use. (Among the thers are Adobe Photoshop, discussed below, nd Visual Reality, Visual Software, 21731 Ventura Blvd., #310, Woodland Hills, CA 1364, 800/669-7318, 818/883-7900.)

Each package of this type has its strengths nd weaknesses, but Picture Publisher is, at he moment, the easiest of the "major" packages to use for Windows. It can take a canned image—or perhaps one exported rom Designer—and modify it—turning a ough shaded drawing, for instance, into a vatercolor or pastel-like rendering

Because this is a pixel-based package, you annot import a CAD vector file such as an AutoCAD DXF directly. You may, however, be ble to save your CAD file to disk as an EPS ile (encapsulated PostScript). Picture Publisher can then import the EPS file. Note that EPS comes in two basic versions, binary and ASCII. Make sure the conversion works on a sample file first!

For lower-power computers, you may find it convenient to work on the image at a lower resolution, then apply your changes to a final, high-resolution version.

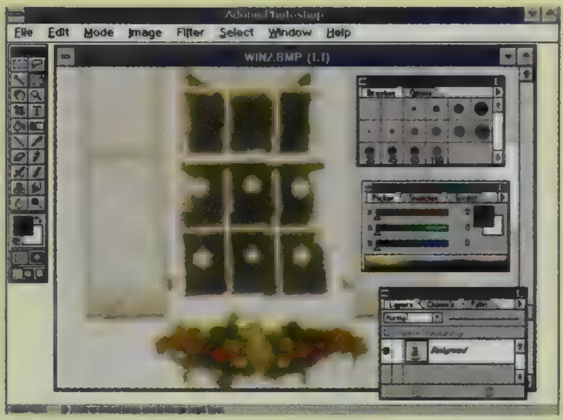
Picture Publisher can accept "plug in" special effects—the standard was set originally by Adobe. Perhaps the most popular and most flexible of these special effects sets is Kai's Power Tools, from HSC (below).

Manuals: One paperback user's guide, fairly good on-line help. Some of the terminology is meant for publishing-oriented artists, of course. Read the manual to learn about masks, channels, and separations.
Ease-of-use: Standard operations are easy to do. None of our reviewers bothered to read the manual at all, until they got curious about the meaning of some of the more advanced commands. Architects will appreciate the ability to edit text after it is placed (each set of inserts is on a separate layer). That's not possible with low-end pixel-based packages.
Error-trapping: Good Autosave, infinite Undo (the default is one step; you'll have to reset it).
301 *on Reader Service Card*

Adobe Photoshop 3.0

Vendor: Adobe Systems, Inc., 1585 Charleton Rd., P. O. Box 7900, Mountain View, CA 94039. 800/833-6687, 408/986-6555, fax 408-986-6587.
Price: $895. Upgrade from previous versions $149 (free if you purchased 2.5 after June 15, PhotoStyler after Sept. 1, 1994; call 800/521-1976). Adobe Photoshop LE upgrade is $199.
Equipment required: Windows-capable computer (10 MB of RAM, 16 MB strongly recommended) or Macintosh (8 MB of RAM) computer. Full installation takes about 13 MB of disk space.

Adobe's Photoshop has been king of the hill for years in the high-end professional market—especially in its Macintosh version (we use it here at ARCHITECTURAL RECORD, in fact, on Macs). If your office is large enough to support an "expert" in its use, or if you are Mac based, this is the package to consider instead of Picture Publisher (unavailable on the Mac). Otherwise, you may waste its power.



Section of window after fractal image enhancement with Images Incorporated 4.0.

It basically offers all the features of Picture Publisher and more. Architects will find the "lighting effects" filter especially useful—it allows you to place different "light sources" on an image.

Manuals: Outstanding, although non-publishing personnel will find some of the terms numbing. There's a quick reference card, quick guide to "beyond the basics" features, 267-page reference guide, and 150-page tutorial, all paperbacks.
Ease of use: Full of features, full of commands. Windows version can only access one directory for plug-in filters; you'll have to custom-install the plug-ins all in one place.
Error-trapping: Undo only available for last operation. No autosave.
302 *on Reader Service Card*

Kai's Power Tools 2.0 for Windows, 2.1 for Mac and PowerMac.

Vendor: HSC Software, 6303 Carpinteria Ave., Carpinteria, CA 93013, 805/566-6200, 800/472-9025; fax: 805/566-6385.
Price: $199.
Equipment required: Versions available for Macintosh and for Windows. Must "plug in" to compatible graphics program, among

Continued on page 117

Materials and Systems for Renovation Use

305

307

306

308

305. Making the grade

Inclinator's cog-drive Hill/Climber is a custom lift designed to travel up and down steep (up to 45 degrees) landscape grades for a distance of up to 250 feet. The unit has a green-painted welded-steel frame, a 500-lb load capacity, and a rated speed of 39fpm. Applications might include travel from front door up to street level at a hillside home, or down a lakeside bluff to a boat dock. Inclinator Co. of America, Harrisburg, Pa.

306. Authentic look and easy care

Solid vinyl siding is being marketed in a greatly expanded range of color, profile, gloss, and [illegible] pattern options that reflect the popularity of nostalgic home designs—like Victorian "farmhouses"—as well as interest in more-authentic appearing remodeling materials. Arvid Elness Architects, Inc., used a new Early American clapboard siding in a 3-in. exposure on town houses in a Minneapolis project (306). Part of this maker's "value priced" Encore line, vinyl boards come in eight colors, and are described as impervious to extremes of hot and cold. Wolverine Technologies, Livonia, Mich.

307. Retrofit heat-control film

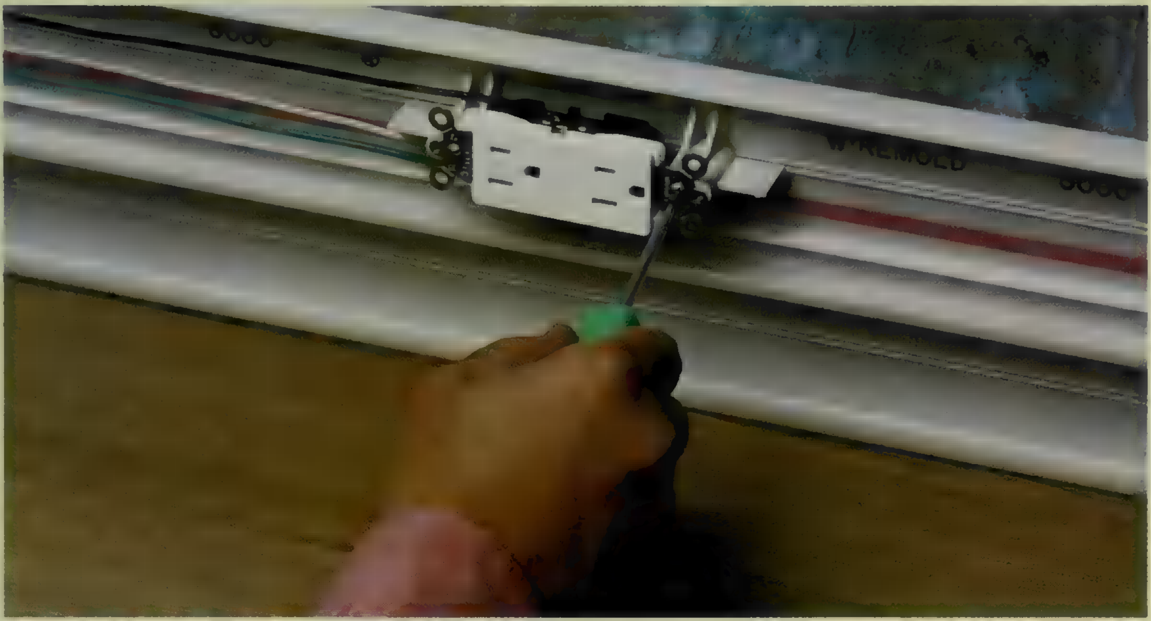
A transparent polyester window film made by the makers of Heat Mirror insulating glass, Solis is said to offer similar sun-control and appearance characteristics in a site-applied product. With a micron-thin, spectrally selective metallic coating, Solis adds no color (tint) or reflectivity to glass. Made for professional application with a scratch-resistant coating on one side and adhesive on the other, Solis film will reduce heat gain by more than 50 percent, absorb UV radiation, and will not reduce the level of daylighting in interior spaces. Preliminary research conducted after the Northridge (Calif.) earthquake, reports *Glazing* magazine, indicates that window-film retrofits, with proper edge treatments such as locking, are an effective safety factor against fall out. Southwall Technologies, Palo Alto, Calif.

308. New windows for skyscraper

Thornton Tomasetti Engineers and Design-

growing range of building products makes existing homes, offices, nd shops more comfortable, easier to use, and more respectful of heir original fabric and current neighborhood.

9



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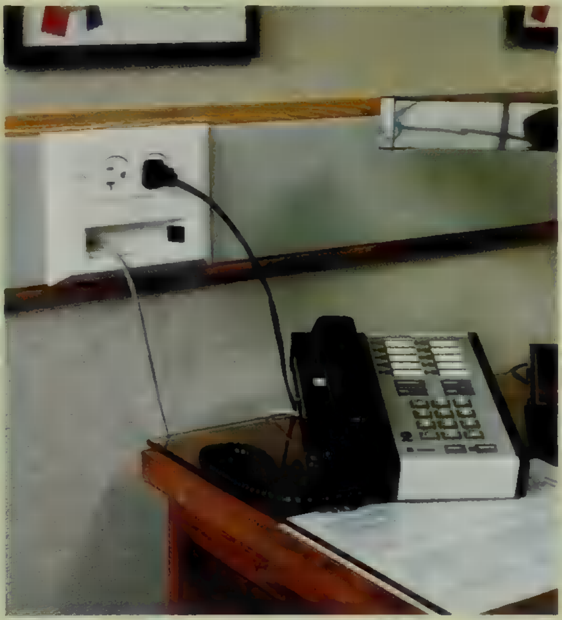


311b

311c

's, Office of Lev Zetlin Associates, Inc., and elmsley-Spear, owners of the Empire State uilding, were able to replicate the look of iginal steel single-paned windows in new uble-hung units for the New York City ndmark. The four-in.-wide operable aluinum frame takes 1-in. tempered insulating azing while meeting stringent Landmarks reservation Commission standards. Paint alysis by PPG produced a modern, higherformance coating system that matched e window's original red trim exactly. RACO, Warrendale, Pa.

09. Customized standard windows

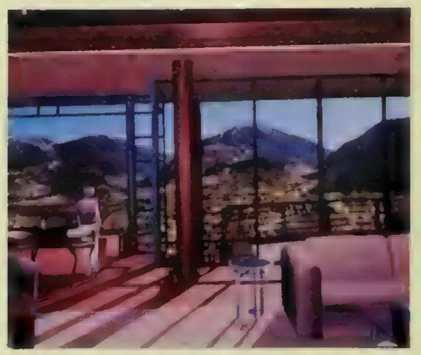
nyl double-hungs reflect the appearance d sight-lines of the original wood fenestration of the Pierce Street Apartments, in a historic district of San Francisco. A custom muntin profile for these Devon windows matched the vertical grid pattern of the original upper lights. CertainTeed Corp., Valley Forge, Pa.

310. Wall-texture, ready-to-paint

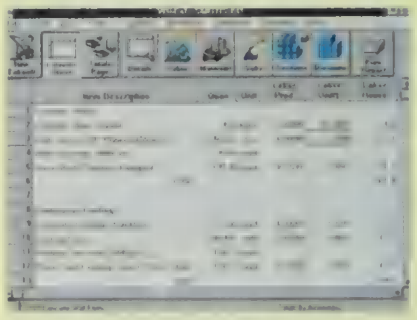
A pre-primed version of paintable, fire-resistant woven-glass wallcovering developed in Europe, Tassoglas meets the environmental standard Oko-Tex 100. Well suited for renovations, the textile has enough body to cover cracked plaster, paneling, or cinder block, and can "breathe," even under coats of paint. Pictured are herringbone and linen textures. Tassoglas, Deerfield Beach, Fla.

311. New power to an old house

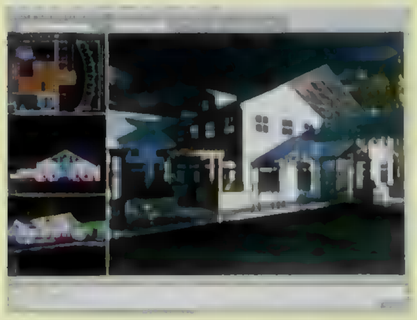
Wiremold's new Access 5000 raceway is designed to resemble a standard, 6-in.-high baseboard in size, profile, and finish. A flexible, less-costly alternative to traditional pipe and box systems, the polymer molding conceals separate channels for electrical power and low-voltage voice/data wiring (311a). The mounting plate accommodates various duplex outlets, phone jacks, co-axial cables, and devices such as RJ11/RJ45 voice/data and Type F co-axial connectors. Installation at chair-rail height can be topped with wood quarter-round (311b). Finish options include maple, cherry, oak, and mahogany veneers, and white, gray, and black vinyl (311c). Wiremold Co., West Hartford, Conn. ■



312. Real-time simulation
Virtual Simulator, using technology which processes up to 150,000 polygons per second (on PCs) developed by Boulder, Colo.-based CadZooks, Inc., runs inside AutoCAD to provide a 3-D simulation solution in real time. Software will now be marketed by Eagle Point, who has, in turn, just (January 1995) acquired the LANDCADD landscape-architecture product. Eagle Point, Dubuque, Iowa.



313. Integrated estimating
Running under Microsoft Windows, WinEst Pro 2.1 supports direct import from CAD packages as well as digitizer takeoffs. It can identify "items of work" from the bill of materials, and calculate needed amounts of building materials directly from plans. Reports are fully customizable and can be previewed. Residential version also offered. 206/395-3631. WinEstimator, Inc. Kent, Wash.



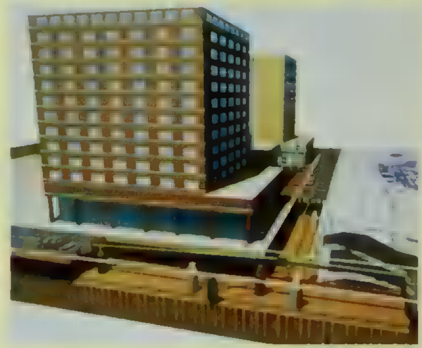
314. Ray-trace/animation
AccuRender 2 is described as the first ray-trace rendering software for AutoCAD to include viewpoint and sunlight animation; a Quick Render option ray-traces most models in less than four minutes—with reflections and shadows. An updated version (1/95) 2.1, works with AutoCAD in both Releases 12 and 13. Retail price: $395; free demo. 206/545-7000. Robert McNeel & Assoc., Seattle, Wash.

315. Full-featured spell check
CADmagic SpellCheck V.2 is a "quality assurance" tool for use within AutoCAD DOS or Windows. It checks all words in a drawing—in blocks, attributes, text entities, attdefs, dimensions, or xrefs—over a 100,000-word database that includes any building or architectural term found in a standard dictionary. Price: $95; not protected. Fax 203/597-1488. Haestad Methods, Waterbury, Conn.

Rendered by [illegible]

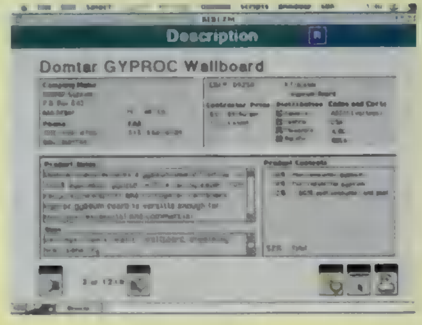
316. Architectural modeler
A low-cost ($189) modeler, Facade 2.6 runs on top of AutoCAD Release 12 or 13 to create three-dimensional models in about 20 minutes. The program constructs buildings as 3-D objects; openings are seamless, and windows, doors, and roofs can be any shape. Developer/architect David Cohn says it really permits "sketching" in 3-D. 206/676-6175. Eclipse Software, Inc., Bellingham, Wash.

317. People for CAD models
Mesh libraries of poseable people—in all skin tones, genders, hair colors, in business suits or jeans—are offered ready to insert and render within either 3D Studio or AccuRender, or in DXF format. Figures are said to be simple to abstract for low-detail design presentations, to arrange in groups and save, etc. Price: $75-$95, 34-42 figures. 714/497/9610. People for People, Laguna Beach, Calif.

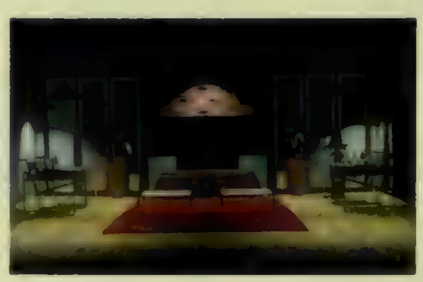


318. New and improved
A new version, Auto-Architect 7 is said to meld the best features of both Softdesk and ASG Architectural products with new networking, translation, and localization tools, new door and window styles, and ADA-referenced templates. The software's foundation consolidates most-used features in a single interface. Update price: $150 per module. 518/283-8783. Softdesk, Inc., Henniker, N.H.

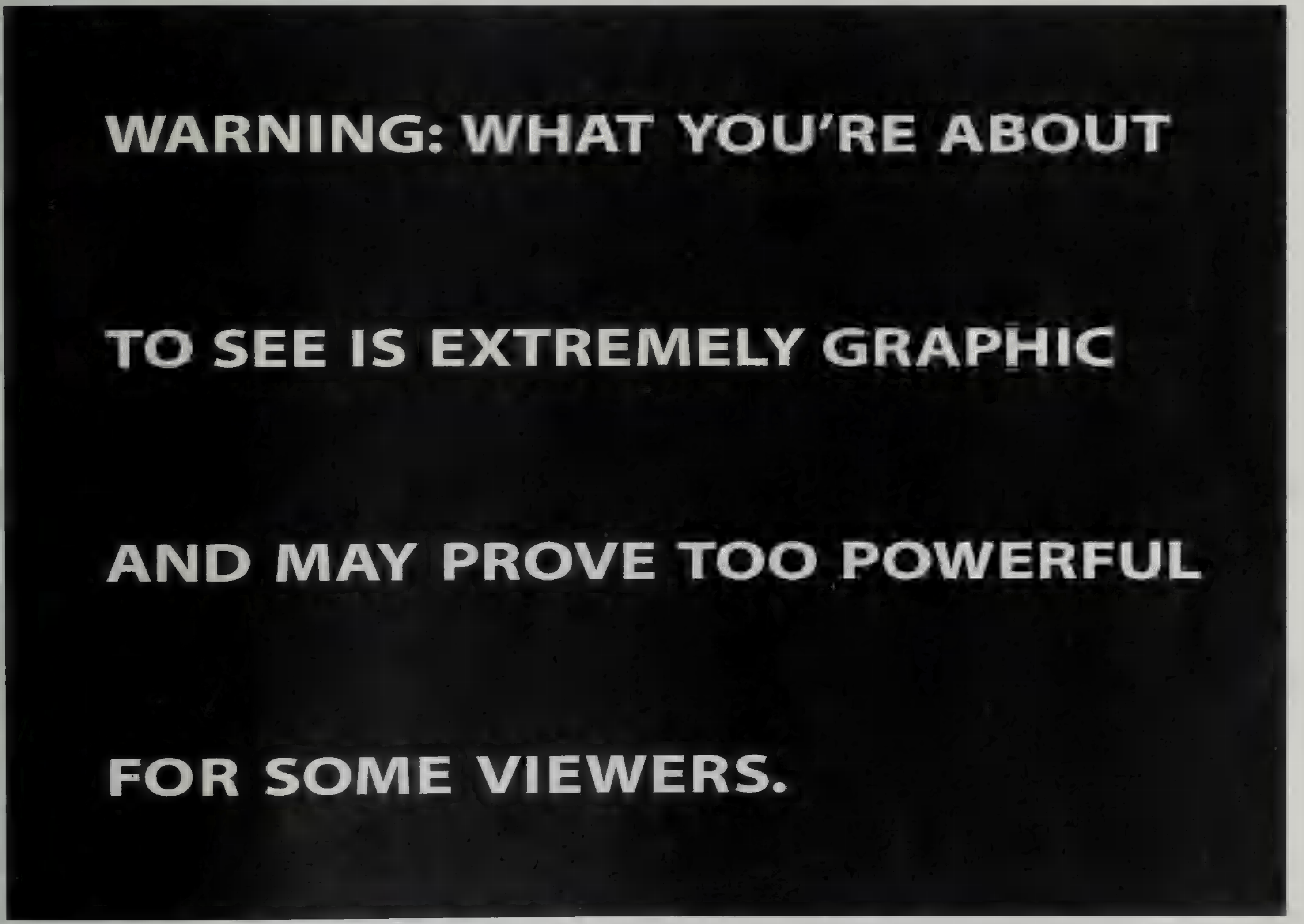
319. Adding a human element
Imagine 3D People includes 30 male and female models wearing clothing styles intended to represent office, casual, and athletic situations; skin tones and clothing colors can be changed. Figures, posed standing, sitting, walking, and jogging, can be incorporated into any scene inside an AutoCAD drawing and rendered by AutoVision, ARE, or AccuRender. Schreiber Instruments, Inc., Denver.



320. How green was my disk
Using a point-and-click interface designed for both Windows and Macintosh, an electronic version of the REDI Guide offers product information on over 1,000 low-toxicity, recycled, and sustainably harvested building materials available across the U.S. Cross referenced; lists contents, codes, certifications, and many prices. Price: $49. 800/346-0104. Iris Communications, Eugene, Ore.



321. Lighting-simulation CAD
Arris Integra software uses mathematical models, not computer-graphics techniques, to produce physically accurate images of dramatic quality, renderings said to be an exact simulation of lighting and materials of a building or space. It replicates the look and behavior of a particular light source: its color, intensity, beam pattern, etc. Sigma Design, Inc., Burlington, Mass. ■



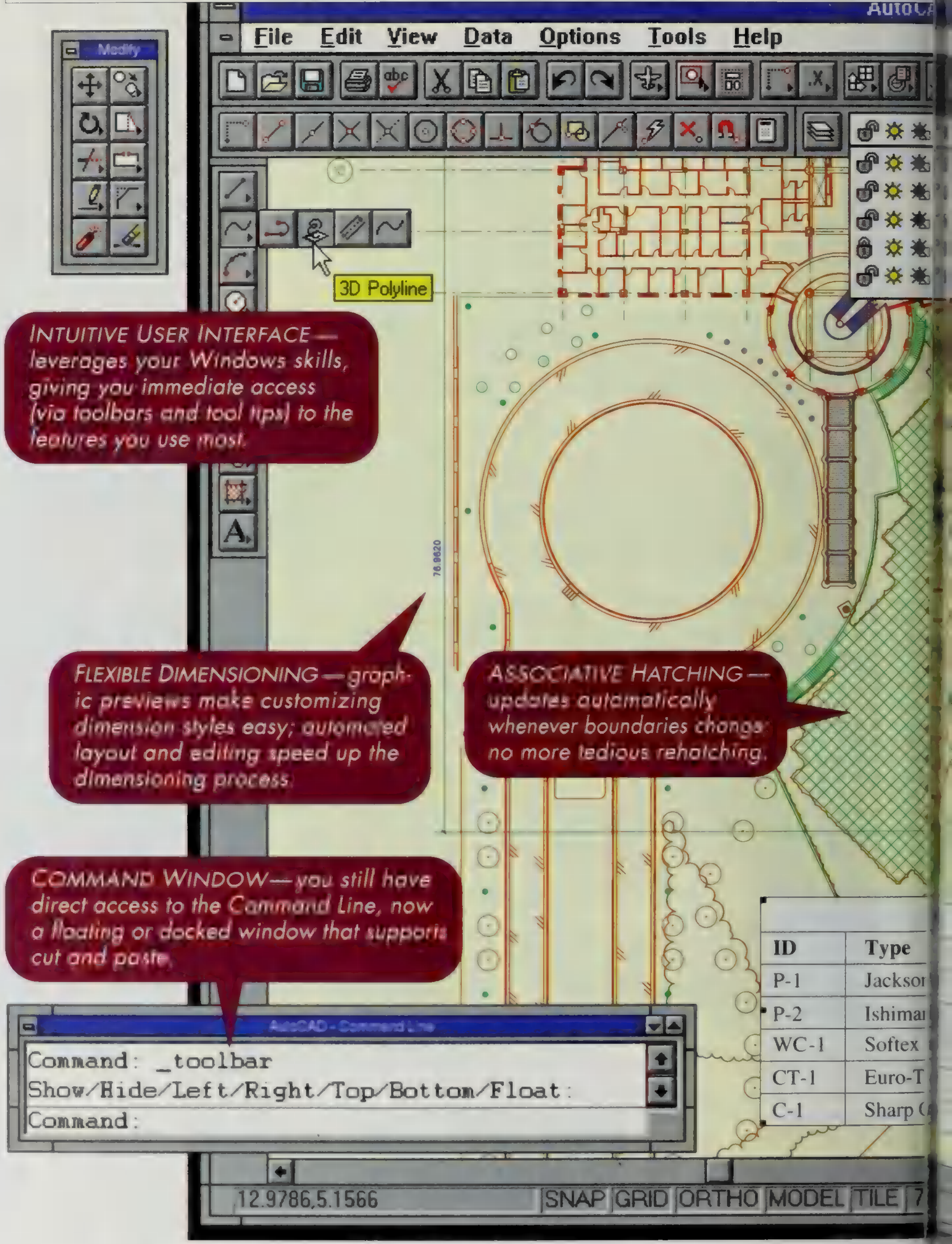
WARNING: WHAT YOU'RE ABOUT

TO SEE IS EXTREMELY GRAPHIC

AND MAY PROVE TOO POWERFUL

FOR SOME VIEWERS.

Introducing AutoCAD Release 13
The most powerful AutoCAD eve



INTUITIVE USER INTERFACE—leverages your Windows skills, giving you immediate access (via toolbars and tool tips) to the features you use most.

FLEXIBLE DIMENSIONING—graphic previews make customizing dimension styles easy; automated layout and editing speed up the dimensioning process.

ASSOCIATIVE HATCHING—updates automatically whenever boundaries change: no more tedious rehatching.

COMMAND WINDOW—you still have direct access to the Command Line, now a floating or docked window that supports cut and paste.

```
Command: _toolbar
Show/Hide/Left/Right/Top/Bottom/Float:
Command:
```

ID	Type
P-1	Jackso
P-2	Ishima
WC-1	Softex
CT-1	Euro-T
C-1	Sharp (

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12.9786,5.1566    SNAP GRID ORTHO MODEL TILE 7
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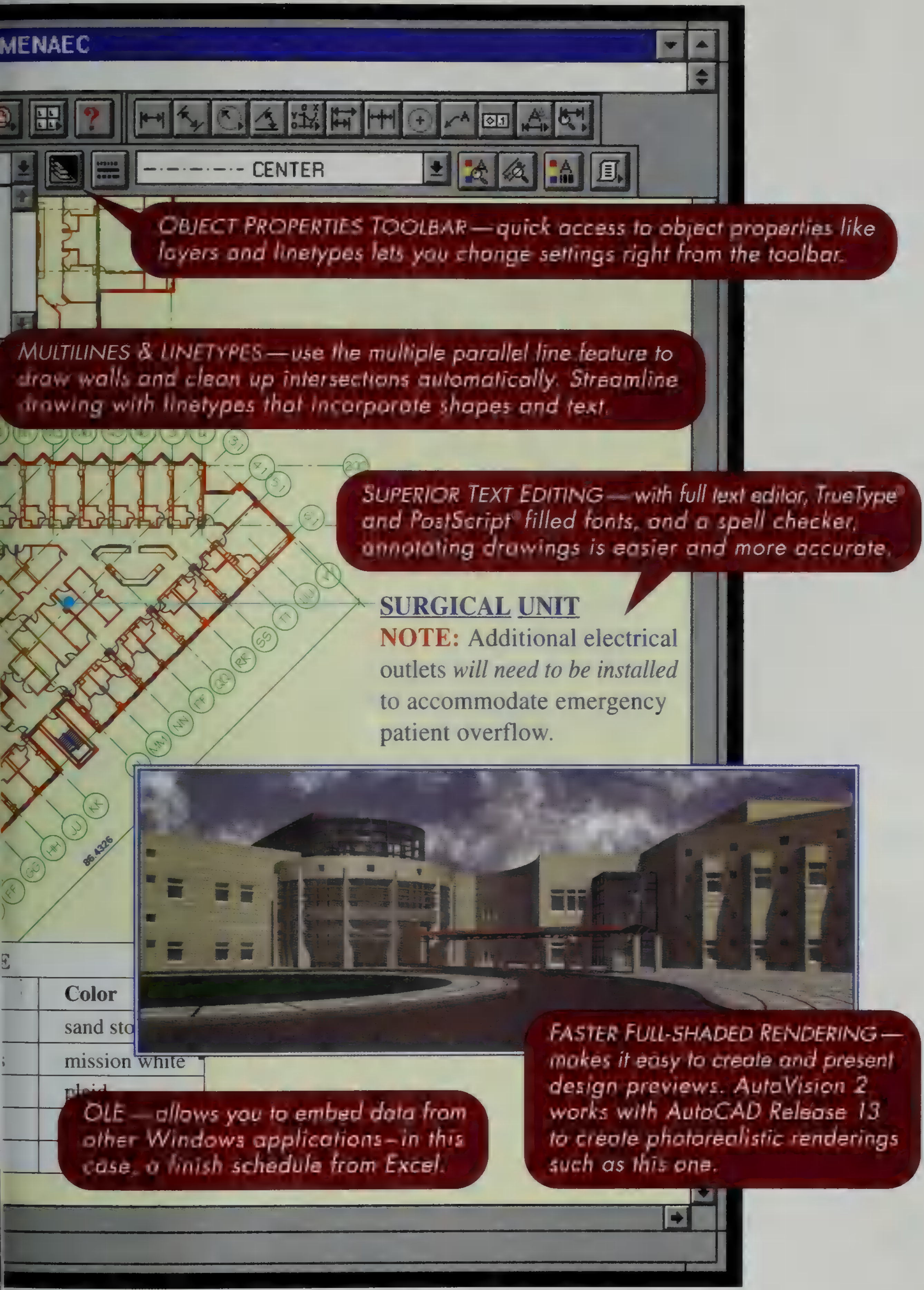
New AutoCAD® Release 13 has more power and more new features and enhan ments than we can show you here. And it's available via a multiplatform license Windows,® Windows NT,® and MS-DOS.® What more could you want? How abou

Copyright © 1994 Autodesk, Inc. All rights reserved. Autodesk, the Autodesk logo, and AutoCAD are registered trademarks, and AutoVision is a trademark, of Autodes MS-DOS and Windows NT are registered trademarks, and Windows is a trademark, of Microsoft Corporation. All other brand names, product names, or trademarks belong t

Autodesk.



OBJECT PROPERTIES TOOLBAR—quick access to object properties like layers and linetypes lets you change settings right from the toolbar.

MULTILINES & LINETYPES—use the multiple parallel line feature to draw walls and clean up intersections automatically. Streamline drawing with linetypes that incorporate shapes and text.

SUPERIOR TEXT EDITING—with full text editor, TrueType® and PostScript® filled fonts, and a spell checker, annotating drawings is easier and more accurate.

SURGICAL UNIT
NOTE: Additional electrical outlets *will need to be installed* to accommodate emergency patient overflow.

FASTER FULL-SHADED RENDERING—makes it easy to create and present design previews. AutoVision 2 works with AutoCAD Release 13 to create photorealistic renderings such as this one.

OLE—allows you to embed data from other Windows applications—in this case, a finish schedule from Excel.

mo. **To order your free demo disk or to request the name of the Author-**
d Autodesk Dealer nearest you, call 1-800-964-6432 and ask for DemoPak
28. Outside the U.S. and Canada, please fax your request to 1-415-507-6142.

tive holders. Elmendorf Air Force Base Medical Facility 2D architectural, engineering, and construction drawings created by Anderson DeBartolo Pan (ADP). Site plan
ndscape design created by Dowl Engineers for Anderson DeBartolo Pan (ADP). 3D extrusions and AutoVision rendering created by Autodesk Marketing Support.

ZINC

Implicitly elegant.
Impressively versatile.
Uniquely zinc.

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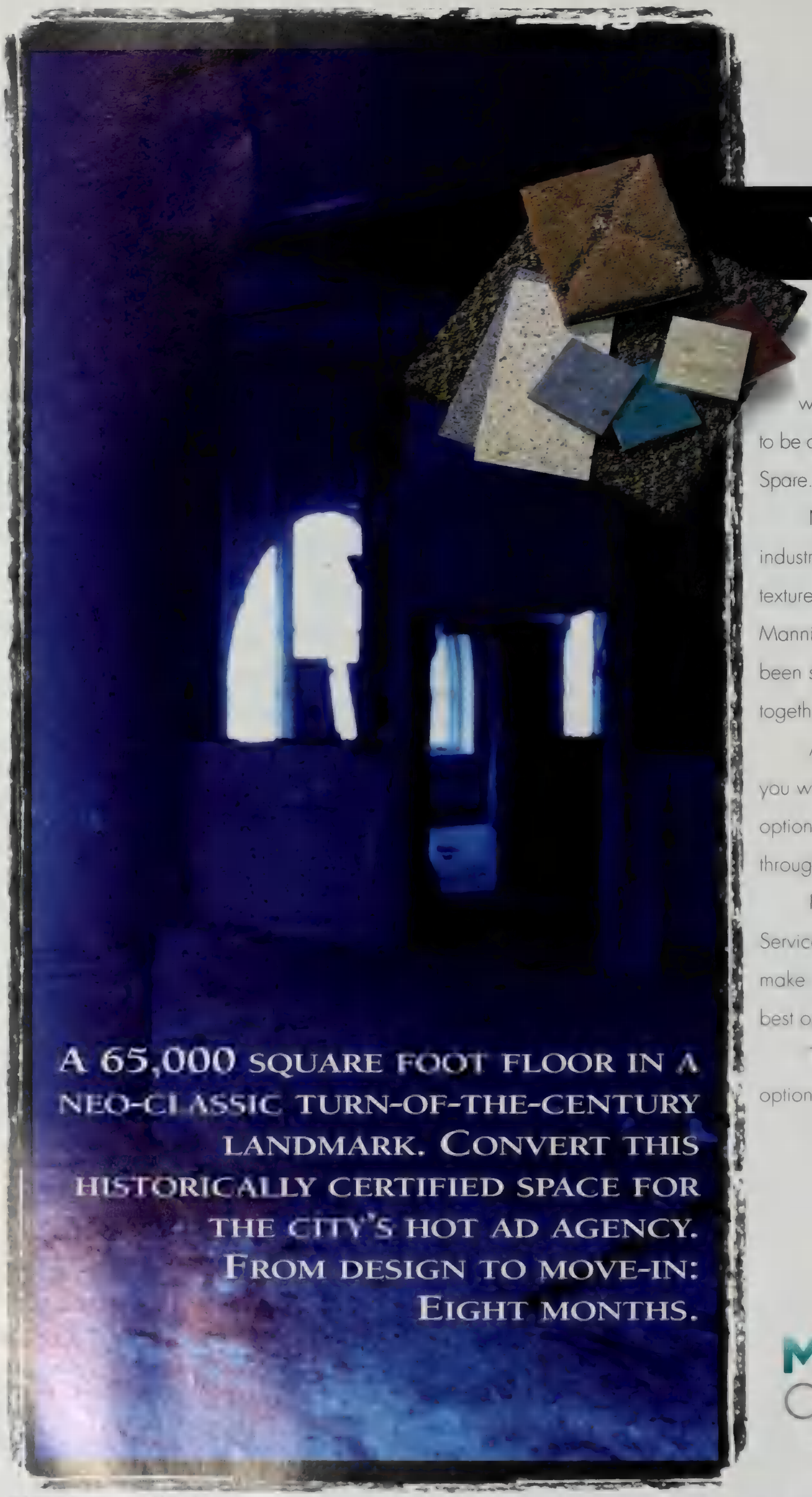
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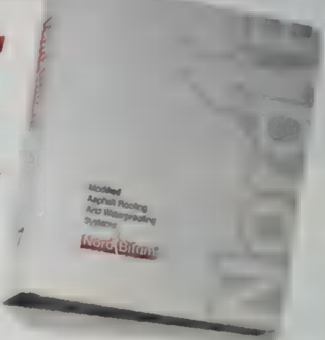

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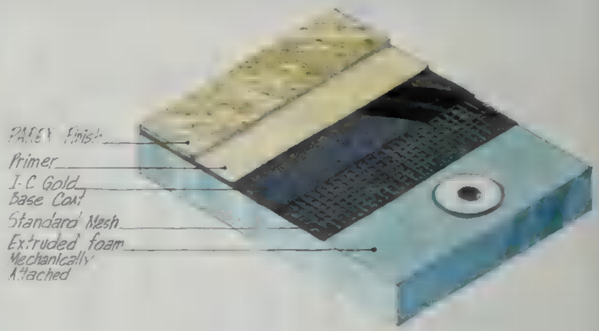

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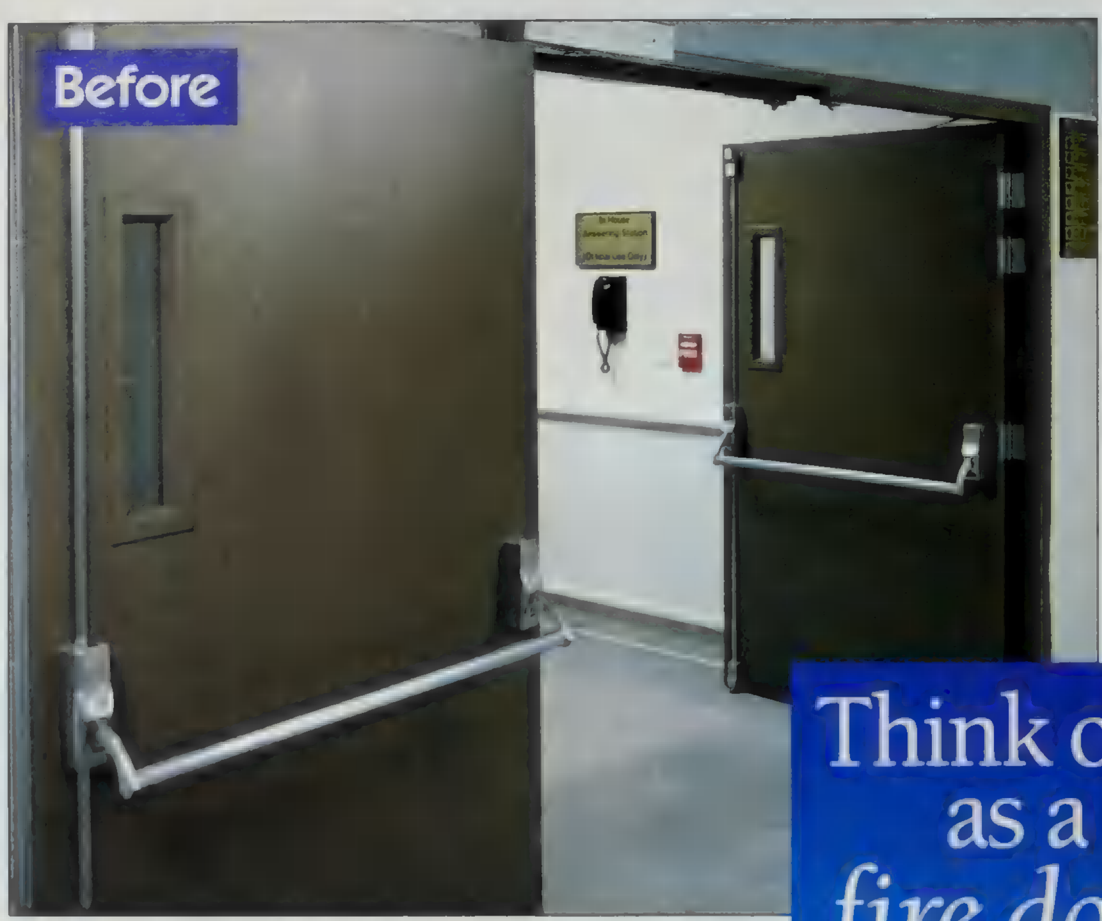

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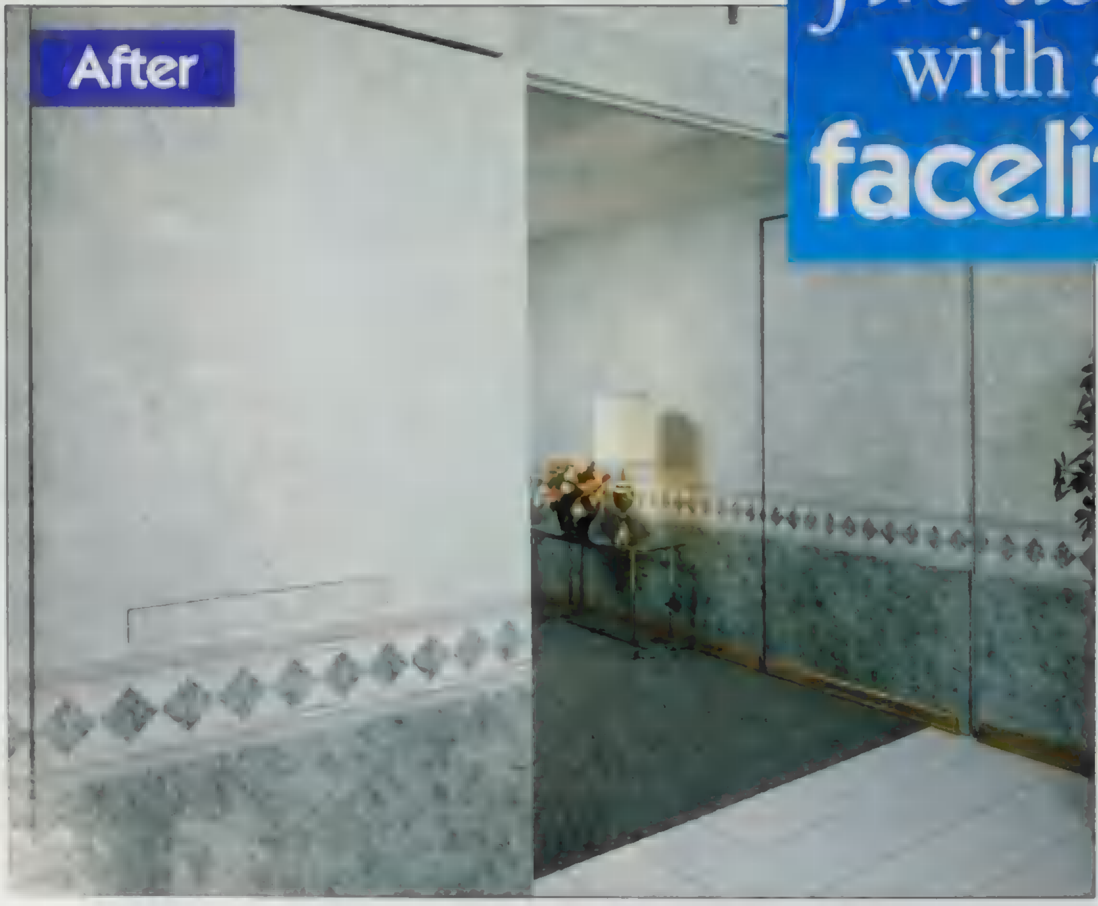

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ARCHITECTURAL RECORD 2/1995

Building Types Study 723/ Adaptive Reuse

Adaptive reuse, or the replacement of obsolete uses by viable new ones, is, in many respects, at odds with the traditional goals of preservationists. These include freezing in place for all time not only original design intent, but also materials and construction methods.

Such goals, notes prominent preservation expert Theodore Prudon, are meant to protect "the real from the virtually real." Now, after years in the trenches of orthodoxy, he is ready to argue for some flexibility–at least in preserving buildings from the recent past. By that he means anything erected in the Modernist Style or later. Such buildings, as he notes on the next two pages, are often victims of change due to impermanent materials, rapidly obsolescent hvac and wiring systems; and construction methods designed to minimize the high labor costs of on-site construction.

On the following pages, RECORD shows examples of buildings to make true preservationists blanch. Among them, Baruch College Library, an official landmark, is one of few to predate the 20th century. Most of the other featured projects were not of high architectural merit when built, yet each deftly demonstrates the subtle architectural and functional opportunities residing in what might have become mere utilitarian throwaways. *Charles K. Hoyt*

anufacturers' Sources
sted on page 121

The Care and Nurturing of 20th-Century Landmarks

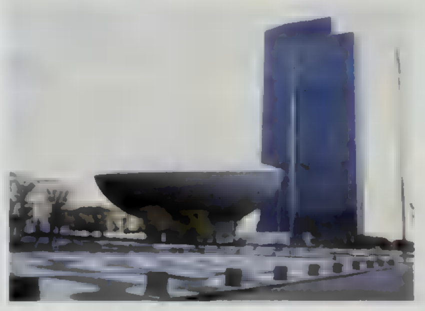
The preservation of 20th century architecture, in particular buildings erected in the last 60 years, demands sharp changes from traditional philosophy and techniques of preservation. These changes stem from the sheer volume of buildings to be considered; from buildings shorter-lived due to new materials and construction technology; the inability of environmental systems, especially hvac and wiring, to meet current standards; and the great size of much of the newly minted building stock.

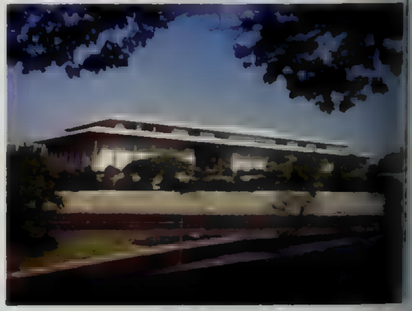
To deal appropriately with these new facts of preservation life, the traditional approach to preservation needs to be looked at from a fresh viewpoint. Historically, one yardstick for judging candidates for preservation has been age (most landmark legislation stipulates a 30 to 50 year age basis), so as to allow, presumably, for a fair assessment. Another has been to consider the degree to which a building represents a period (in line with criteria established by the National Register of Historic Places). But the nature of the new architecture demands a different set of preservation principles and a new approach to preservation technology. You cannot save the buildings of Le Corbusier and Louis Kahn to guidelines formulated by John Ruskin.

The new criteria must consider the crucial issue of restoration to a structure's original appearance using only authentic original materials and construction technology, or replacement by newer materials and techniques. Rising labor costs placed a premium on reducing the cost of manufacturing products and their installation, raising the dilemma of how to restore economically and efficiently an architecture largely based on labor-saving technology, thinner materials, and lower margins of error. For example, in the case of Louis Kahn's 1955 Ewing, New Jersey bath house (opposite), should one try to restore the original concrete block walls and timber-framed roof, or resolve to preserve the design *intent* of the original but rebuild with state-of-

Landmarks of a new age

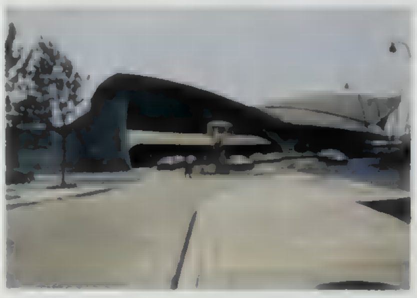
Should architect and client have considered landmark status when these buildings were built? Architect Michael Graves's Dolphin Hotel at Disney World in Orlando, Florida (upper left) is one of the most discussed buildings of Post Modernism. But it is made of masonry and stucco similar to Charles Moore's Piazza d'Italia in New Orleans, which now presents ongoing maintenance problems. Yet replacing the Piazza with more durable materials would be altering the original artifact, contrary to traditional preservation philosophy. Certainly the Watergate complex in Washington, D. C. by architects Luigi Moretti and Corning, Moore, Elmore, Fisher (upper right) has become one of the nation's better known structures. But functional preservation of such a large building would be prohibitive. Similar issues touch Edward Durrell Stone's Kennedy Center (lower right) and Harrison and Abramovitz's Empire State Mall in Albany (lower left).

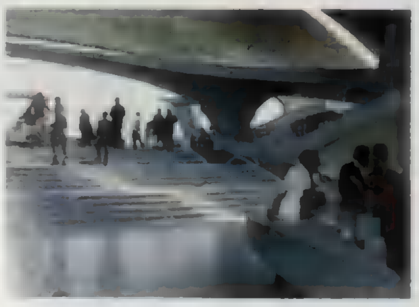




The critical impact of functional change

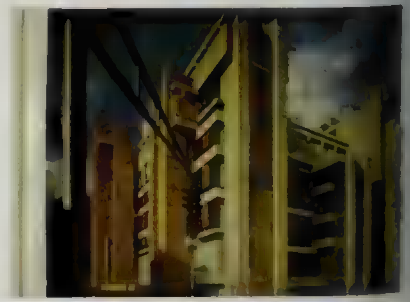
Eero Saarinen's TWA Terminal at JFK Airport in New York City, built in 1956 and expanded in 1962, symbolized a time when air travel was promoted as an experience (right). Now, its vast lobbies, monumental stairs, and huge sculptural windows are out of step with current high-volume [illegible] to where it is about to be [illegible]. It can be [illegible] Theodore Prudon, [illegible] and [illegible] of the original spaces [illegible] concern.





Partial replacement

The picturesque roof profile of Cass Gilbert's 54-story 1913 Woolworth Building in New York City (top) includes terra cotta towers, which architects Ehrenkrantz & Eckstut have sheathed in aluminum replicas to preserve the original fabric and stabilize its deterioration. Architect Beyer Blinder Belle's renovation of Paul Rudolph's Yale Architectural School (bottom) includes exchanging monumental sheets of glass for new windows with mullions that can hold insulated glass for thermal efficiency.



Swanke Hayden Connell Architects' Theodore Prudon reasons that old rules won't apply to ecent buildings and proposes new approaches

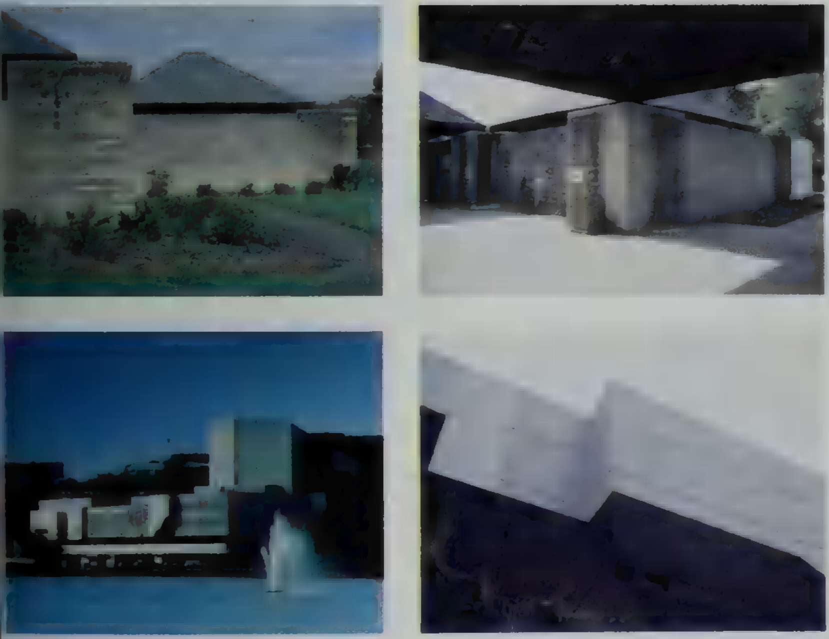
e-art materials and technologies to obtain that effect, possibly arting from scratch on a different site? Besides, an older low-rise, adbearing masonry building is unlikely to encounter the same xtent of failure as a veneer stone-clad, often taller structure. More- ver, traditional building facings were designed to weather; odernist buildings were designed to look crisp for all time.

herefore, given the shoddy construction, the now largely obsoles- ent hvac and other systems, and the inflexibility caused by narrowly ocused programming and design, efforts to restore the original must ive way to a more free-ranging philosophy for reasons of cost and echnical practicality.

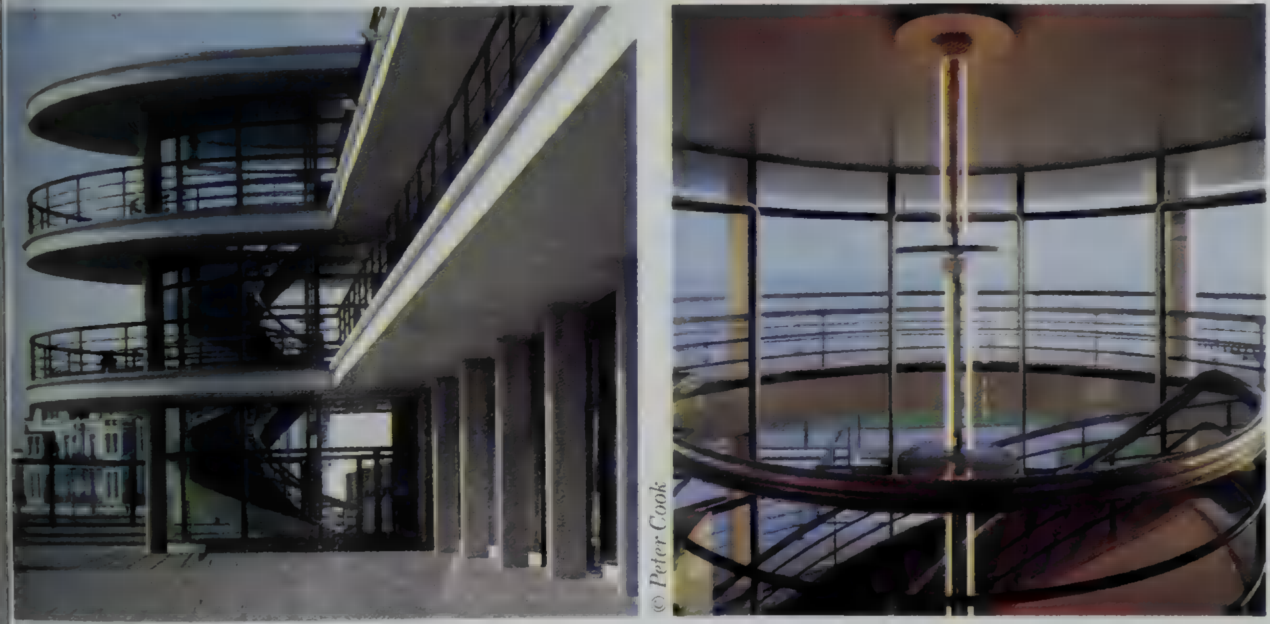
inally, planning ahead for preservation is critical. Early planning, volving landmark preservation groups and owners, would help revent many last-minute preservation crises, especially cases of "it's the only one left." To qualify as a candidate, a building would need to be rated against its underlying architectural principles—for example, the machine-made look sought by the Modernists—the significance of its architect, the functional and economic drivers (e.g. the inherent obsolescence of an investment commercial structure vs. the long-term life of a museum), and the physical context.

Traditional preservation philosophy guards the "real" against the "virtual real." When applied to most 20th century architecture, this approach is both unrealistic and unfair to the design intent.

This essay was staff-written based on material provided by Theodore Prudon, a preservation authority on the staff of Swanke Hayden Connell Architects of New York City.


© James Russell

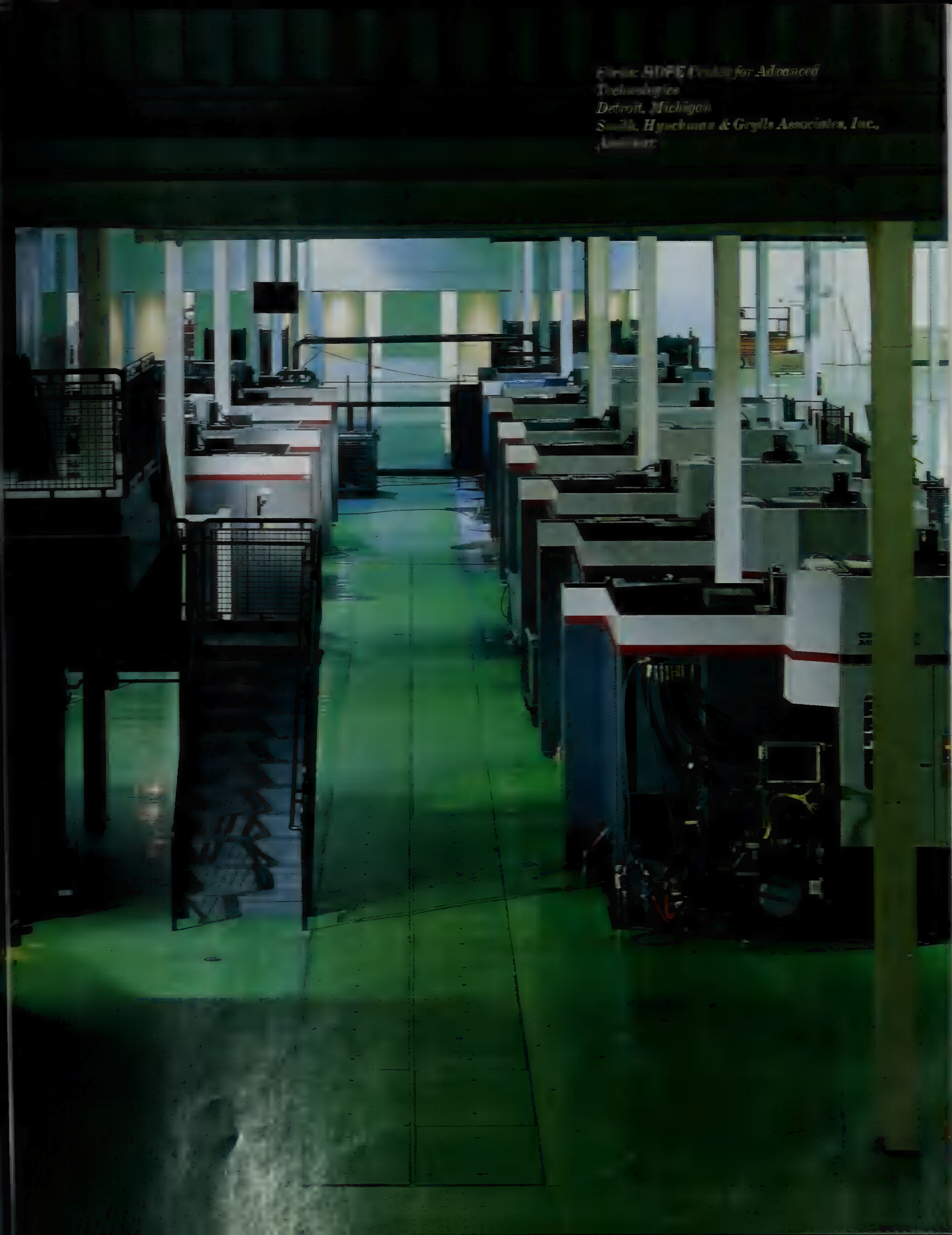
When is a partially replaced landmark still a landmark? *Two current buildings by important 20th-century architects exemplify the problems of preservation standards developed for earlier buildings. Substantial portions of their original construction may have to be rebuilt with new materials. Louis Kahn's Trenton bath house, built in 1955 in Ewing Township, New Jersey (top), has long been unappreciated by its owner, The Jewish Community Center. It has deferred maintenance on the exposed concrete-block walls and timber-framed roofs (natural materials valued by Kahn for their visual integrity) until water caused settlement, cracking, and discoloration that cannot be erased by repair. Architect James Kruhly of Philadelphia has launched a restoration campaign. Alvar Aalto's 1965 Finlandia Hall in Helsinki (bottom) was meant to be seen as a pristine white object, but now its thin marble veneer has bowed and curled, destroying the intended effect—and adding safety problems. The marble will most likely be replaced with a thicker, more durable substitute.*


© Peter Cook

Stripping for longevity *The De La Warr Pavilion in Bexhill-on-Sea, England was designed in 1934 by Erich Mendelsohn and Serge Chermayeff to lure tourists and entertain locals in a series of lounges and dining rooms. In 1986 it was recognized as a work of prime architectural rank, and a restoration was begun. Most existing finishes were replaced, including exterior stucco. Current restoration work guided by architect Troughton McAslan includes removing later accretions such as wood doors, and adding a thin services element.*

Good Neighbor

A 1930 Detroit warehouse has been converted to a successful place for training manufacturing experts from inner-city schools.



Focus: HOPE Center for Advanced Technologies
Detroit, Michigan
Smith, Hinchman & Grylls Associates, Inc., Architect

Seldom is a single project asked to accommodate this many diverse demands. At the social level, Focus: HOPE Center for Advanced Technologies, or CAT, was called upon to train inner-city youths for careers as manufacturing engineer-technologists of the highest caliber. Financially, the center had to manufacture products that would turn a profit. On an architectural plane, a 1930 warehouse structure had to be recycled into a comfortable, motivating, energy-efficient workplace. And at the urban level, the building in its new role had to maintain a familiar, friendly face to its neighborhood.

It makes the grade on all these counts. Focus:HOPE, an eclectic urban enterprise that is part charity, part business, and part job training, is also active elsewhere—in food-bank grocery distribution, computer instruction, and human-rights education. CAT taps graduates from Detroit's high schools and after six years of training in state-of-the-art computer-integrated manufacturing, sends them into the world, with some now earning salaries in the high five figures. Profits from production of low-volume high-skill parts, mostly for the auto industry, pay for wages and training costs, making CAT self-supporting.

The original plans of the building, attributed to Albert Kahn, were never found. "Buildings like this were considered a commodity, a consumable supply," says SHG design principal William Hartman. "Very little was invested from an artistic or historic viewpoint. With [its] standard configuration, it really didn't matter whether one had the original plan or not. Nothing was unique." So, faced with the need to develop what is at base a brand new building type, the architect divided the 180,000-square-foot single-level plant area into six manufacturing "neighborhoods," each anchored by a three-story "power tower" identified by 5 ft.-9 in. Corbu-esque numerals (see previous page spread). Each neighborhood comprises 15 manufacturing cells. The 40,000-square-foot, three-story street-front office wing contains interview and locker rooms at the first level, an electronic library on the second, and a conference center on the third.

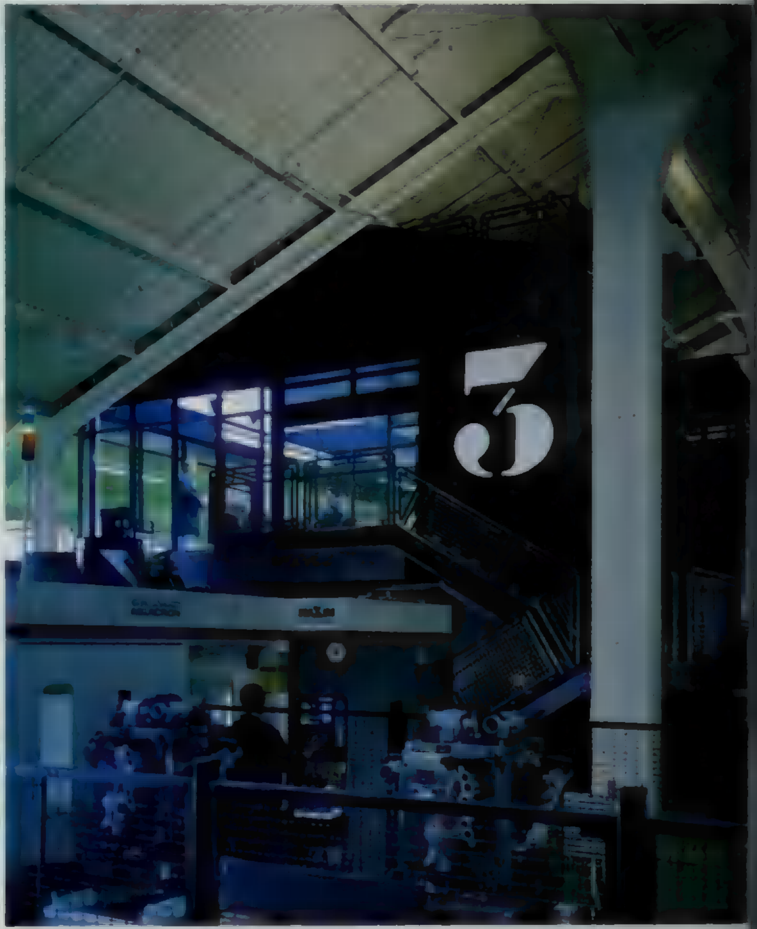
The two segments are separated by a full-building height open atrium spine topped by a "supertooth," an enlargement of the southernmost of the sawteeth that roof over the original structure (see photo opposite and section, next page). This supertooth, at the point where manufacturing meets the office wing, opens up space for the viewing platform and is a key source of daylight.

Independent of Detroit's utilities, CAT uses natural-gas fueled co-generation to serve all its needs. Waste heat from the generators is used for heating the plant's air and water, more than doubling fuel efficiency at substantial cost savings. In summer, coolant fluids are cleaned and recycled, curtailing toxic exhaust.

CAT stems from an unusual partnership of Focus: HOPE with government, corporations, foundations, and universities. Says Focus: HOPE founder and executive director Father William Cunningham: "The building makes possible an innovative approach to teaching. There are no offices, no doors. From high to low, all are out in the open and mix [illegible]. The power towers, with their manufacturing training team rooms, [illegible] right next to the machines."

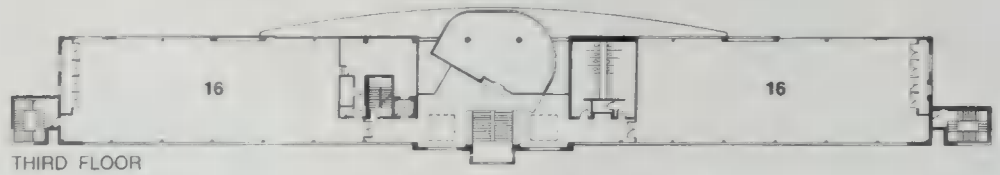
When the 1930 structure was built, Hartman points out, "a manufacturing [illegible] conceived as an enclosure, a functional space for machines [illegible] supplemented by humans. As a new century dawns, [illegible] on the humans. Any leverage in competitive performance [illegible] through building design is a significant payoff."
Stephen [illegible]

© SHG photo

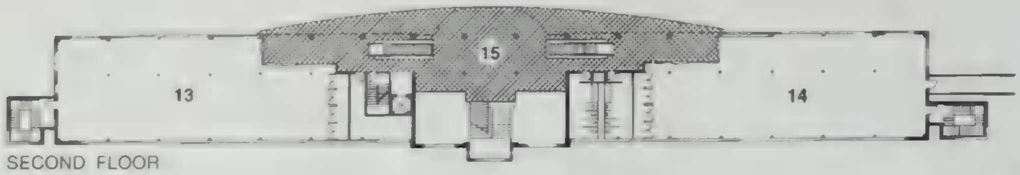


© photos by Gary Quesada of Korab/Hedrich-Blessing, except as noted

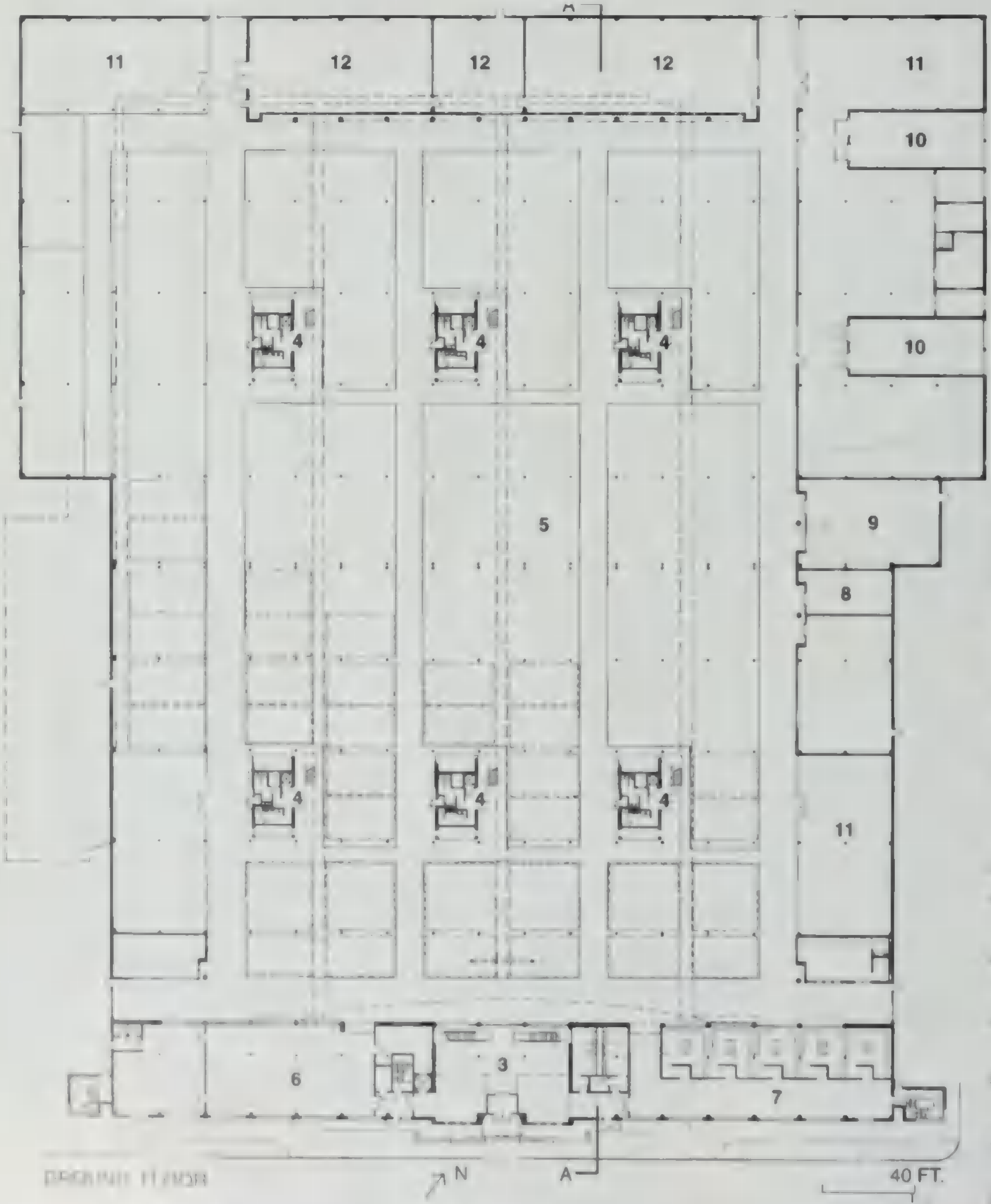
The three-story 1930 building (top) comes right up to the street-line; the central portion was altered to provide a welcoming entrance lobby and to meet ADA requirements. The three-story circulation spine (opposite page) is a gathering place for trainees and staff, and includes a platform that lets visitors observe manufacturing. Power tower #3 (above) is shown with computer-aided manufacturing units in foreground. Indirect lighting units mounted on columns are supplemented by high-intensity fixtures over each machine; they engage only when the machine is operating.



THIRD FLOOR

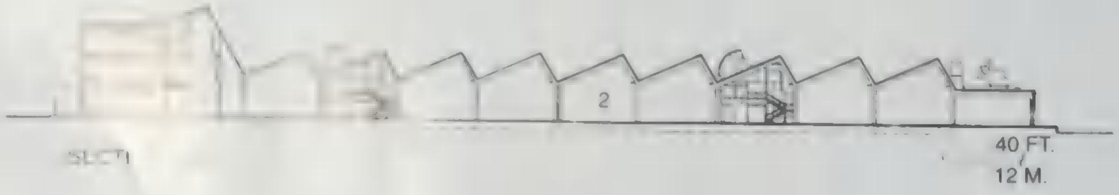


SECOND FLOOR



GROUND FLOOR

1. Supertooth atrium
2. Plant
3. Lobby
4. Power tower
5. Plant
6. Cafeteria
7. Locker rooms
8. Material testing
9. Tool room
10. Dock
11. Long-term storage
12. Total energy plant
13. Electronic library
14. Learning area
15. Viewing platform
16. Meeting room



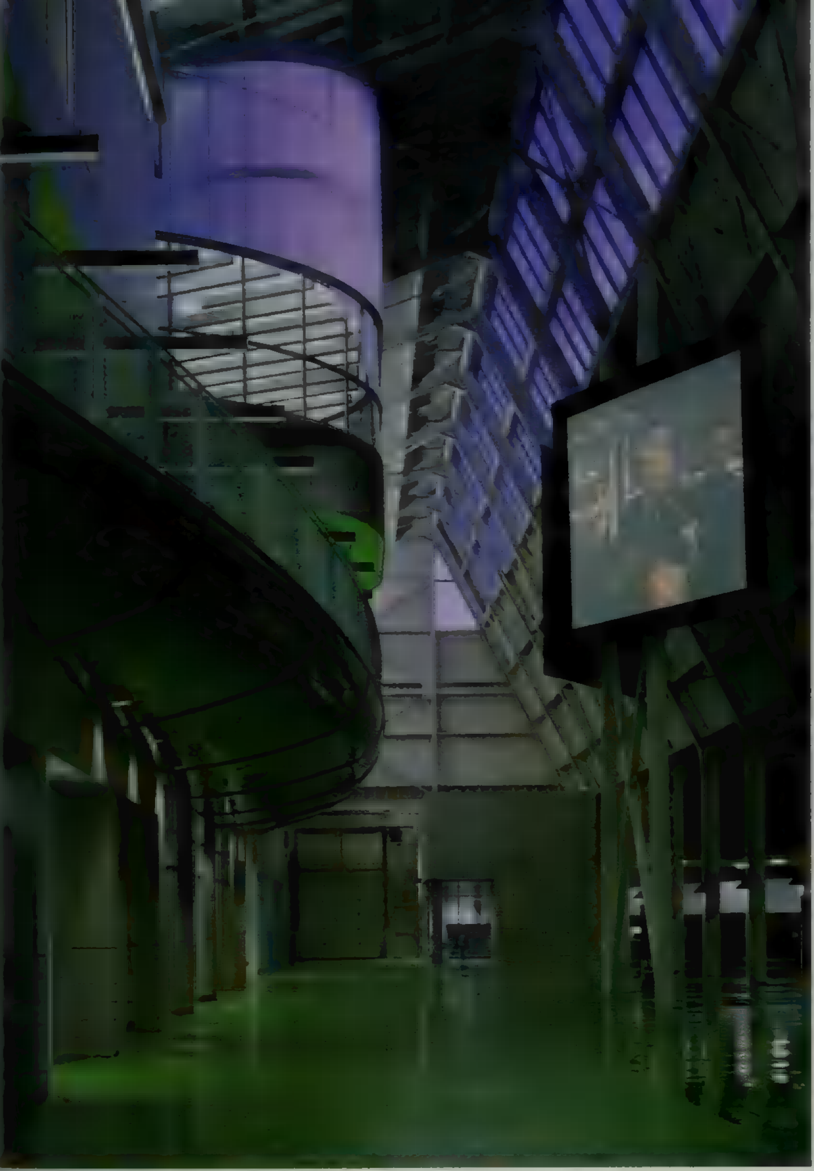
SECTI

Power towers (photo 4, opposite page) are foci for the plant's six "neighborhoods." Finished in black painted embossed steel, each tower contains air-handlin equipment at the first floor, alon with local temperature and power controls. Air-rotation systems circulate warm or cool air to their "neighborhoods." Power is transformed to operating levels and likewise distributed. At the second level, glass-enclosed manufacturing training rooms with computer terminals are used for meetings by manufacturing teams and fo formal instruction.

Machinery is mounted on epox floors; other areas are rubber. Both are colored a bright chartreuse chosen over other colors for its symbolism of hope.

The spine (photos 1 and 2, opposite) is reached through a three-story lobby (photo 3). Insulation was added to the original roof structure, which consists o a series of purlins spanning 20 feet between steel arches. The ro also acts as a key component in drawing air through the plant.

Credits
Focus:HOPE Center for Advanced Technologies, Detroit, Michigan
Architect: *Smith, Hynchman & Grylls Associates, Inc.—S. B. Vora, partner-in-charge; Willia Hartman, design principal; Robert Mertz, project manager; Eric Lanciault, Chris Beck, Mik Paquette, Greg Graczyk, Mark Zimmerman, Art Titran, Nicol Stepanian, design team*
Engineers: *Smith, Hynchma & Grylls Associates, Inc. (structural, electrical, plumbing); Ha Engineering (mechanical)*
Consultants: *Johnson Johnson & Roy, Inc. (landscape, civil); Smith, Hynchman Grylls Associates, Inc., Gary Steffy Lighting, Inc.(lighting)*
Construction Manager: *R. A. DeMattia Company*



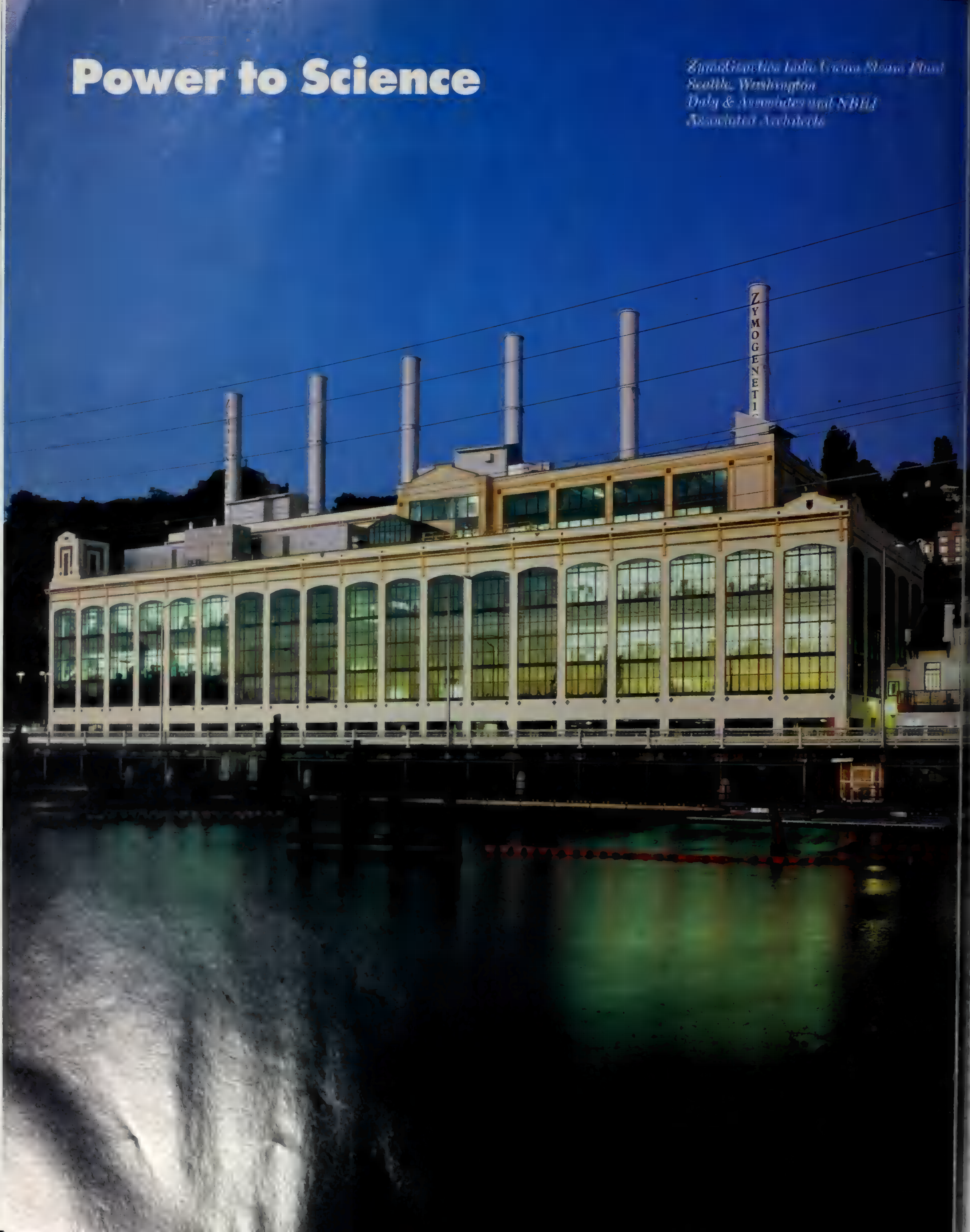
3

2

1

Power to Science

ZymoGenetics Lake Union Steam Plant
Seattle, Washington
Daly & Associates and NBBJ
Associated Architects



or over 80 years, one of the most prominent and quirky landmarks on the shoreline of Seattle's Lake Union has been the City Light Steam Plant. A huge, long building, its seven smoke stacks made it appear a beached ocean liner. Designed by City Architect D. R. Huntington, it was built in four phases, beginning with a small hydroelectric station n 1911, a tiny, Mission Style house-like structure (opposite right), where turbines generated electricity from water piped from an upland reservoir.

Ten years ago, the plant was shut down. In 1989, shortly after it was designated an historic landmark, the 100,000-square-foot-building was sold to the Koll Company, which intended to transform it into condominiums. The company commissioned architects Daly & Associates to begin rehabilitation design and seek approval from the Seattle Landmarks Board. Though approval was granted, the developer was unable to secure financing. Two years ago, a new and rapidly growing biotechnology firm—ZymoGenetics—decided that the old steam plant would make a fine, if unconventional headquarters and research laboratory. NBBJ Architects had previously designed a lab for ZymoGenetics and became associated with Daly & Associates, taking responsibility for interior architecture and design, and laboratory planning. ZymoGenetics moved into its new building in the summer of 1994.

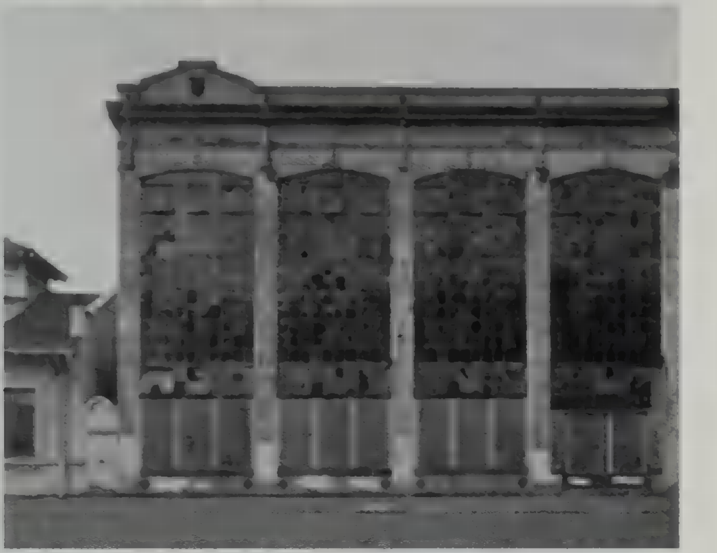
Walking through the building today, it is difficult to conceive the real extent of its transformation. Pipes, boilers, generators, turbines, and other material weighing 23-million pounds were removed. The first loor slab was replaced to provide additional headroom for two levels of parking below, where massive battered foundations that had supported machinery were removed. The distinctive steel stacks were lso discarded, but eventually replaced by six smaller steel stacks now used as vents, due partly to public pressure to preserve the look.

Administrative offices occupy the first level, along with a lobby-ontrol point. Because the building had been public, the City required ome form of public access. Accordingly, visitors get a glimpse of the obby and a typical high bay of the building through a glass-enclosed vestibule. A new public dock was built on the water. The public also has access to the original hydro plant. There is an espresso bar on the treet side (this is Seattle, of course) and a dining-community room n the water side. Laboratories occupy the upper floors. The old plant had been designed with two different structural grids. The design eam reflected this smashing together of two geometries repeatedly hrough the new building. Passing along a corridor, for example, one uddenly finds floor tiles veering off in unexpected directions.

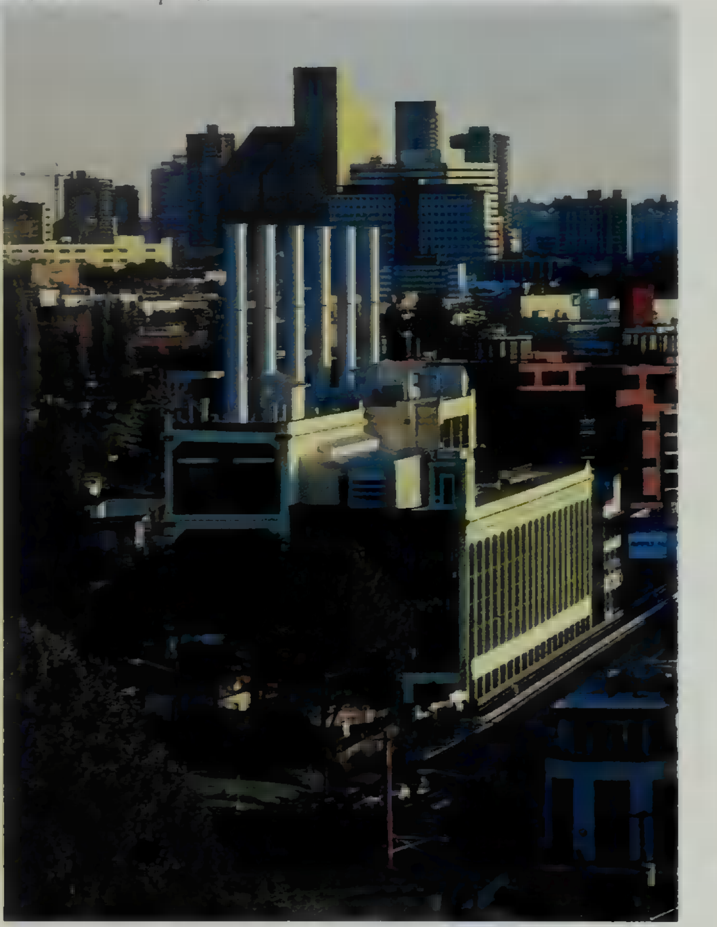
The architects inserted a novel staircase up the center of the building. top photo, overleaf). It serves a number of purposes including access to adjacent floors faster than the elevator. Visually, it separates two phases of the building's construction, and terminates a corridor that lices crossways from front to back, linking entry and lake. And it provides social space for employees, especially on a large landing canilevered from the stair toward the lake (see section overleaf). The esigners took their inspiration from a metal, spiral stair that had een in the steam plant, but was too unsafe to keep. In the lobby, arge battered walls painted with a metallic, lead-colored coating overleaf left) pass through the ceiling to the floor above. They are unctured by copper-colored "pipes," (in reality, new structural olumns) to complete the theatrical effect. *Mark L. Hinshaw*

Mark Hinshaw is an urban-design consultant in Seattle and a columnist on architecture and urban design for the Seattle Times.

© *Two Guys Photography photo*

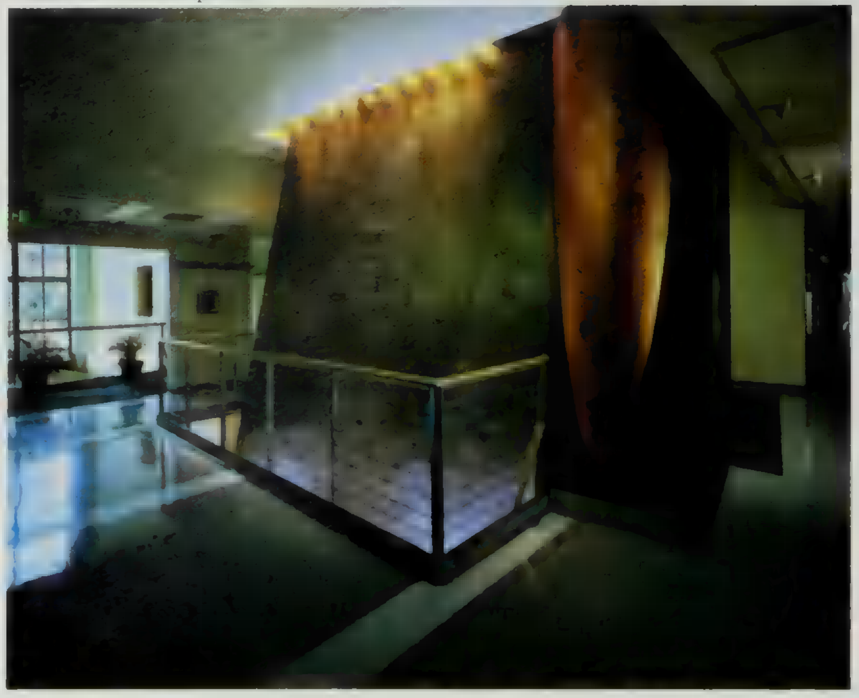


© *J. F. Housel photo*

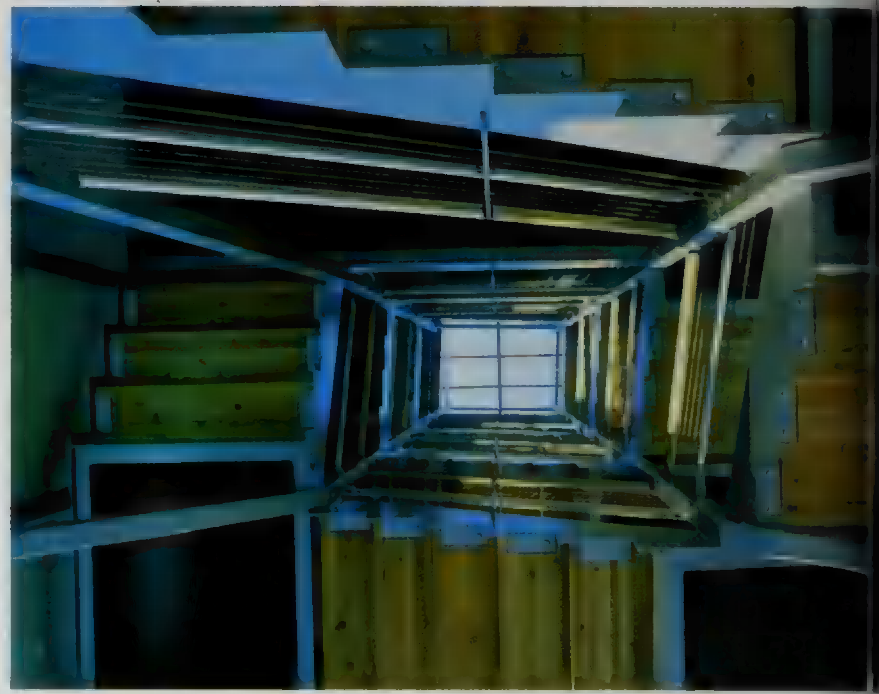


The building was in sad shape (top) before Daly & Associates began an extensive exterior restoration. Daly left the original small-paned windows around the two lower floors of garage, but had to replace glazing on the upper floors to meet strict energy standards. The building sits over water, atop 2,000 first-growth original timber piles that were driven into the shoreline to support the steam plant. Geotechnical research revealed the piles to be in superb condition, so supplementing them was not required.

© Steven L. Rosen photo

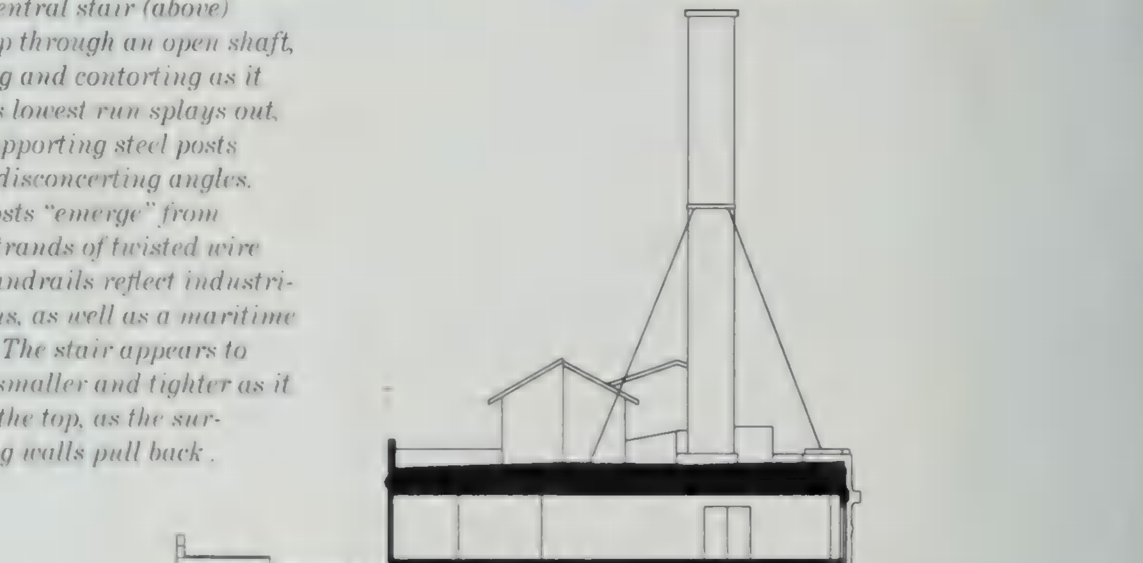


© Russ Muir photo.



Credits
ZymoGenetics Lake Union Steam Plant
Seattle, Washington
Owner: *ZymoGenetics*
Associated Architects: *Daly & Associates and NBBJ—Jim Daly, principal-in-charge for Daly & Associates; Scott Wyatt, principal-in-charge for NBBJ; John Schwartz, project manager for Daly & Associates; Brad Leathley, lab planner for NBBJ; John Palewicz, interior architect and project manager for NBBJ; Dean Longwell, Frank Martin, Jim Saunders, Ken Chipman, Rob Hutchison project team for Daly & Associates; Peter Damento, Doug Sabatke, Cathryn Kraus, Rysia Suchecka, Roger Stocker, Ed Storer, Steve Bettge, Karen Hillam, Jacqui Evanchik, project team for NBBJ*
Engineers: *Ratti Swenson Perbix (structural); Holaday Parks, Inc. (mechanical design-build); Cochran Electric (electrical design-build); Auburn Mechanical (plumbing design-build), Fire Systems West (fire sprinklers design-build)*
Consultants: *Sparling (lighting); Hart & Mayes (concrete [illegible])*
General Contractor: *Lease Crutcher Lewis*

A new central stair (above) winds up through an open shaft, changing and contorting as it rises. Its lowest run splays out, while supporting steel posts bend at disconcerting angles. Some posts "emerge" from walls. Strands of twisted wire along handrails reflect industrial origins, as well as a maritime context. The stair appears to become smaller and tighter as it reaches the top, as the surrounding walls pull back .

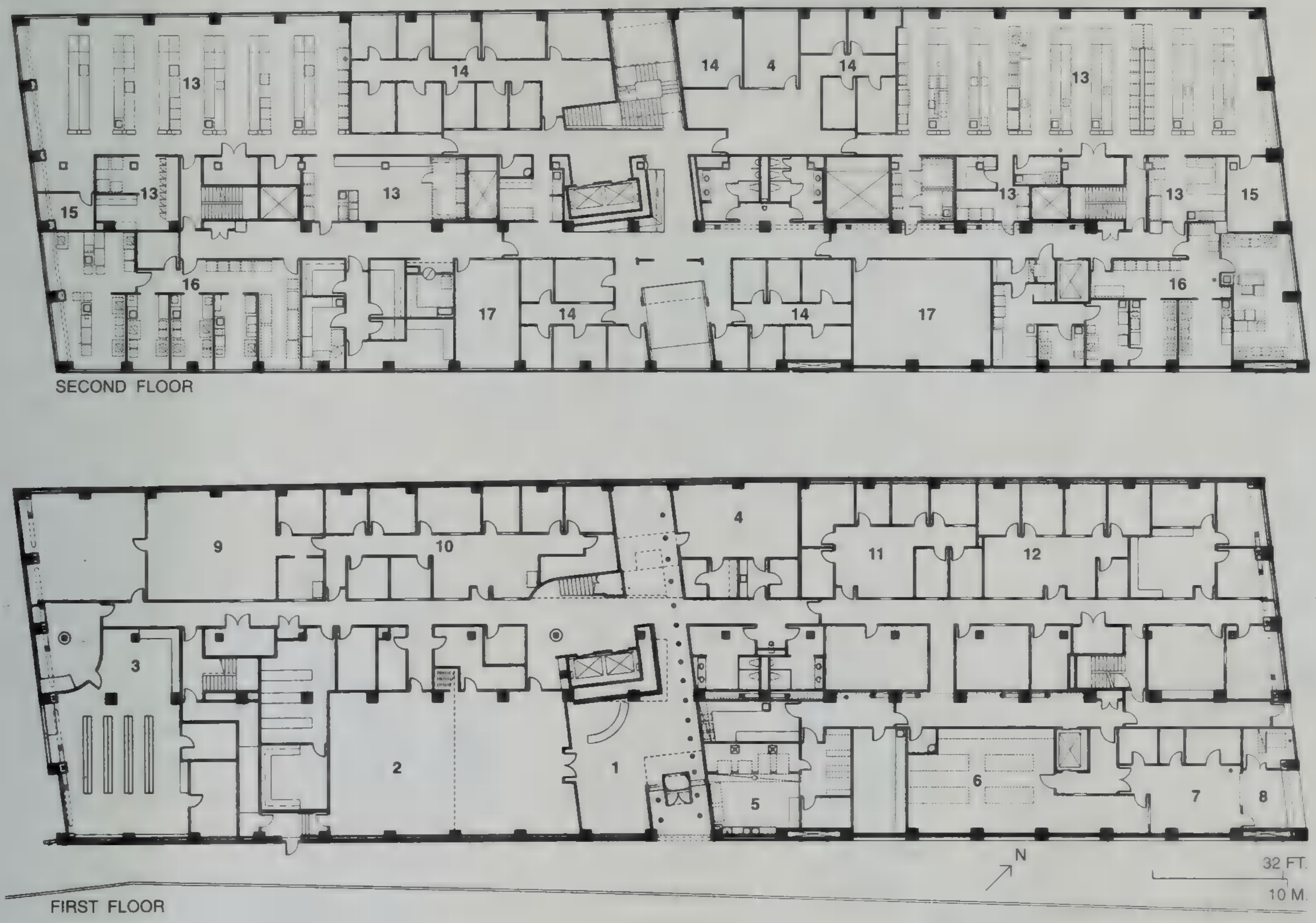


SECTION AT LOBBY/ATRIUM

1. Lobby
2. Central stair
3. Expansion levels
4. Mechanical
5. Parking levels

J. F. Housel photo.

© Steven L. Rosen photo



1. *Lobby*
2. *Auditorium*
3. *Library*
4. *Exec conference*
5. *Glass washing*
6. *Inventory storage*
7. *Ship/receive*
8. *Loading dock*
9. *Finance offices*
10. *Administration*
11. *Medical*
12. *Patents*
13. *Labs*
14. *Offices*
15. *Quiet rooms*
16. *Tissue culture*
17. *Future expansion*

EXIT

Games Architects Play

Game Show Network Building
Culver City, California
Steven Ehrlich Architects

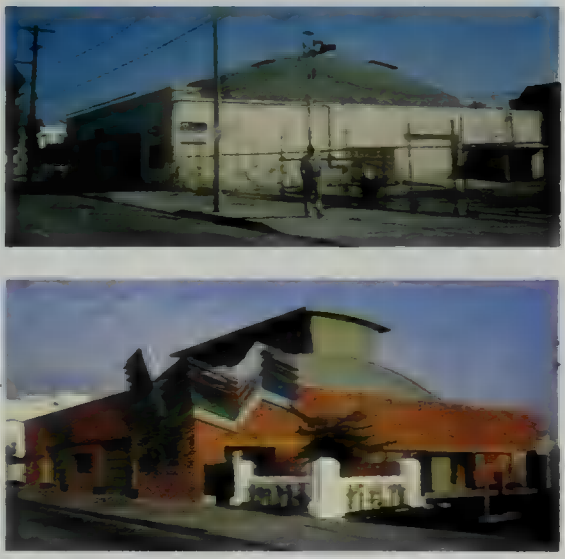
at do you get when you transform a 1930s-vintage garage into the ome for the first all-digital cable network? "A very low-tech building iat has been turbo-charged into a very high-tech use," according to teve Ehrlich, who recently completed the feat for Sony's brand new ;ame Show Network in Culver City, California. After Ehrlich istalled a second floor, inserted a large light monitor, ripped up the oncrete slab to add computer wiring, and added several levels of iechanical systems to protect against interrupts, he ruefully admit-ed it might have been more economic to tear down the brick-walled, ow-string-trussed little structure. But, he says, "It had heart and oul, and that made it worth doing all this."

he Game Show Network Building is only the latest part of an exten-ive renovation of the Sony Studios that began when the Japanese ompany took the site over from MGM. The emphasis in this ongoing roject, which has involved several architects and $100 million so far, as been on renovation and reuse, mainly because of the availability f a large amount of under-utilized space. Ehrlich himself is currently nishing a child-care center for Sony right behind the Game Show letwork Building.

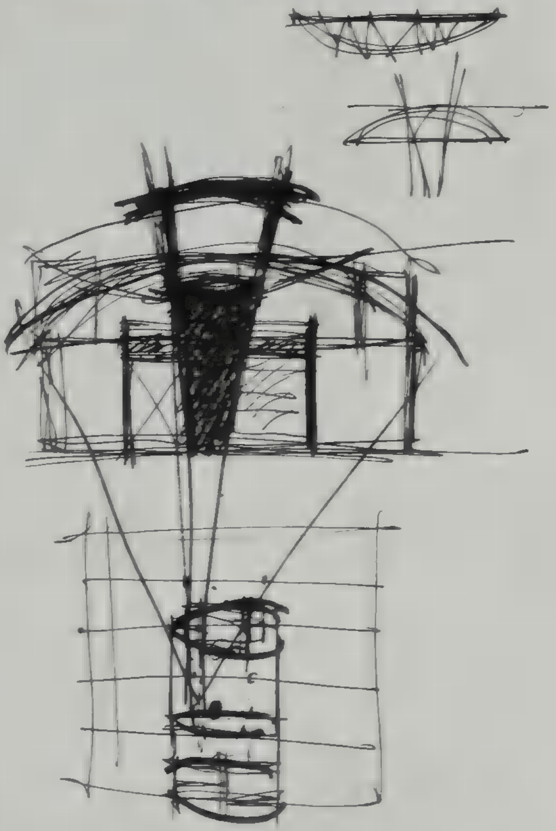
he original client for the Game Show Network project was the artoon division of Sony. Last July, however, Sony changed its mind nd asked Ehrlich to rework the almost completed plans to accommo-ate the new network, which broadcasts 24 hours of game shows each ay. Fortunately, a "borderless design" was requested, fitting in with hrlich's desire to create open space. This was the only solution to icorporating bearing walls and inward-turned space. "It was impera-ve that everything was open," explains Game Show Network resident Michael Fleming: "I wanted to make sure that, whether ou were in production or sales, you would always rub shoulders with ie process of production."

hat shoulder-rubbing starts from the moment you walk in the door nd confront the three central elements of the Network: the "tech ore," a glass-enclosed studio where the programming is actually ssembled and sent, through a cable to a nearby dish, up to a satellite r broadcasts; the studio, a "miniature bow-string-truss building" here robotic cameras controlled from the core film the network's riginal programming; and the glass-box conference room, where all nportant network decisions are made. These three objects occupy a vo-story atrium lit by a monitor affectionately known as "the iohawk." This grand gesture of light punches through the original oof on four canted steel columns that follow the arc of the original oof. Ehrlich tucked all the support spaces around the atrium on the rst floor, while the executives inhabit offices on a loft-like balcony ist below the roof line.

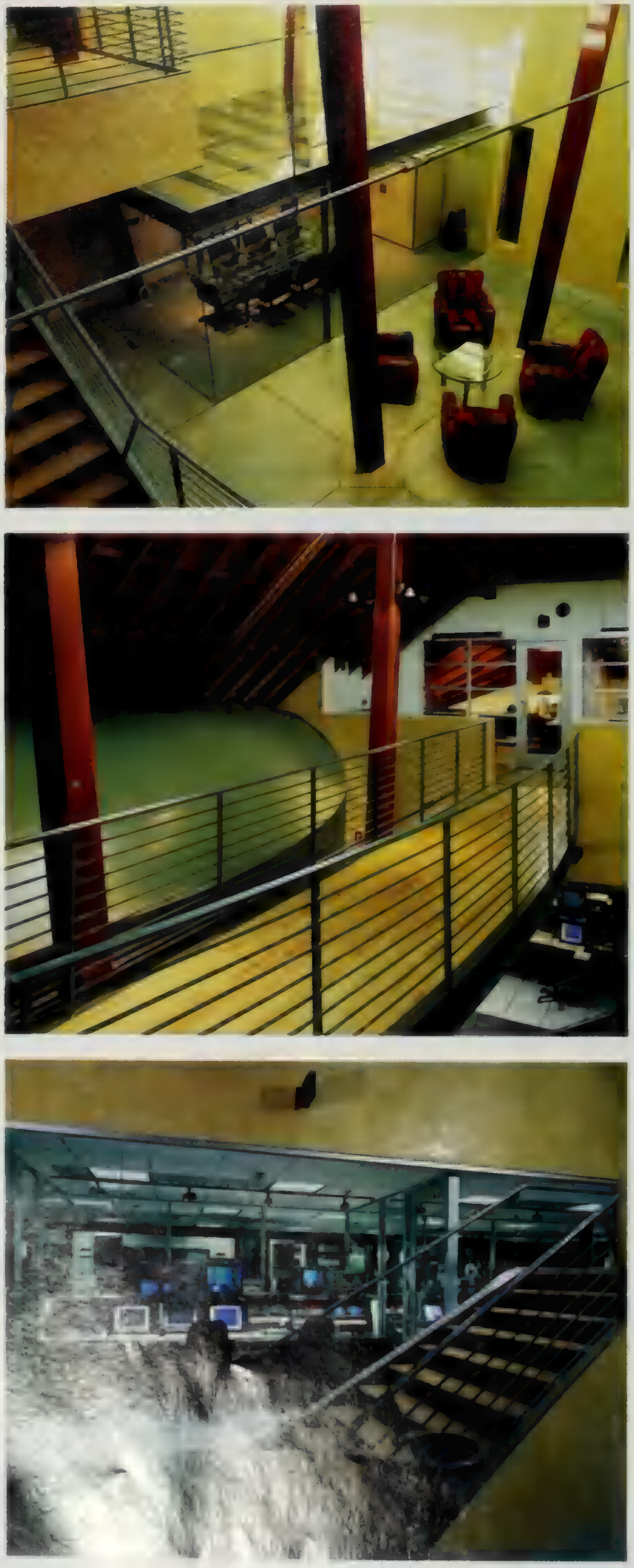
he result is a building that is more symbolic of preservation than, trictly speaking, preservation itself. Just as the clerestory roof and ie glimpses of the sky it offers become, as Fleming puts it, "our indow to the outside world," so the set pieces that gather around the trium and the remaining wood members that arch overhead stand in r the nature of new and old, here brought into an artfully composed patial relation. *Aaron Betsky*



© Tom Bonner photos

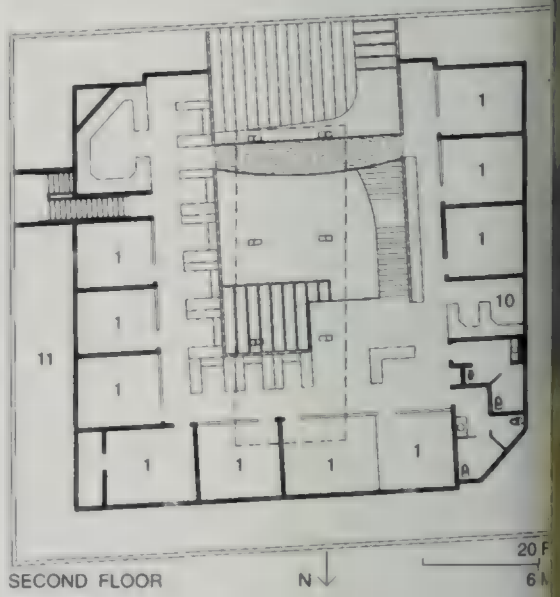


Architect Steve Ehrlich adapted a bow-string truss building to new uses by raising its roof and using the radius of the original structure for the supports of a new skylight. The result is an internal courtyard that gathers the functions of a new cable network into a light-filled "borderless space" (top). Michael Hayden's "Lumetric Sculpture" at the building's corner (above) is shatter-resistant "Implex" sheets laminated with mirrored, high-frequency, bi-directional diffraction gratings that reflect light in continually changing patterns.



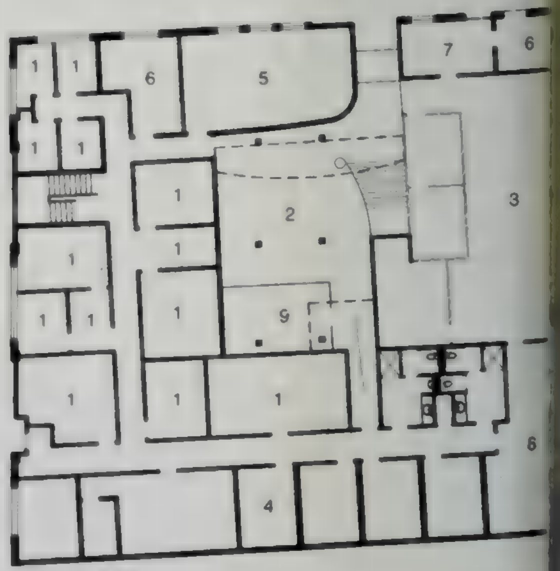
The Game Show Network building's atrium whose galvanized light fixtures and exposed riveting reminds one of the building's industrial lineage, contains the client's three signatures: a glass-enclosed conference roo (top); the enigmatic studio, whose galvanize covering, painted the same color as the roof exterior, suggests an external building brought inside (center); and the tech core, th control booth from which technicians contro the company's ephemeral "product" (bottom

Credits
Game Show Network Building
Culver City, California
Owner: *Sony Pictures Entertainment*
Architect: *Steven Ehrlich Architects—Steven Ehrlich, principal designer; Gary Alzona, project architect; Carlos Kitzinger (model); Jeff Turner, Brent Eckerman, Iris Anne Regn, Jim Schmidt, Thomas Zahlten, production staff*
Furniture: *Sony Architectural Services—Connie Fay Northrop in association with Steven Ehrlich Architects*



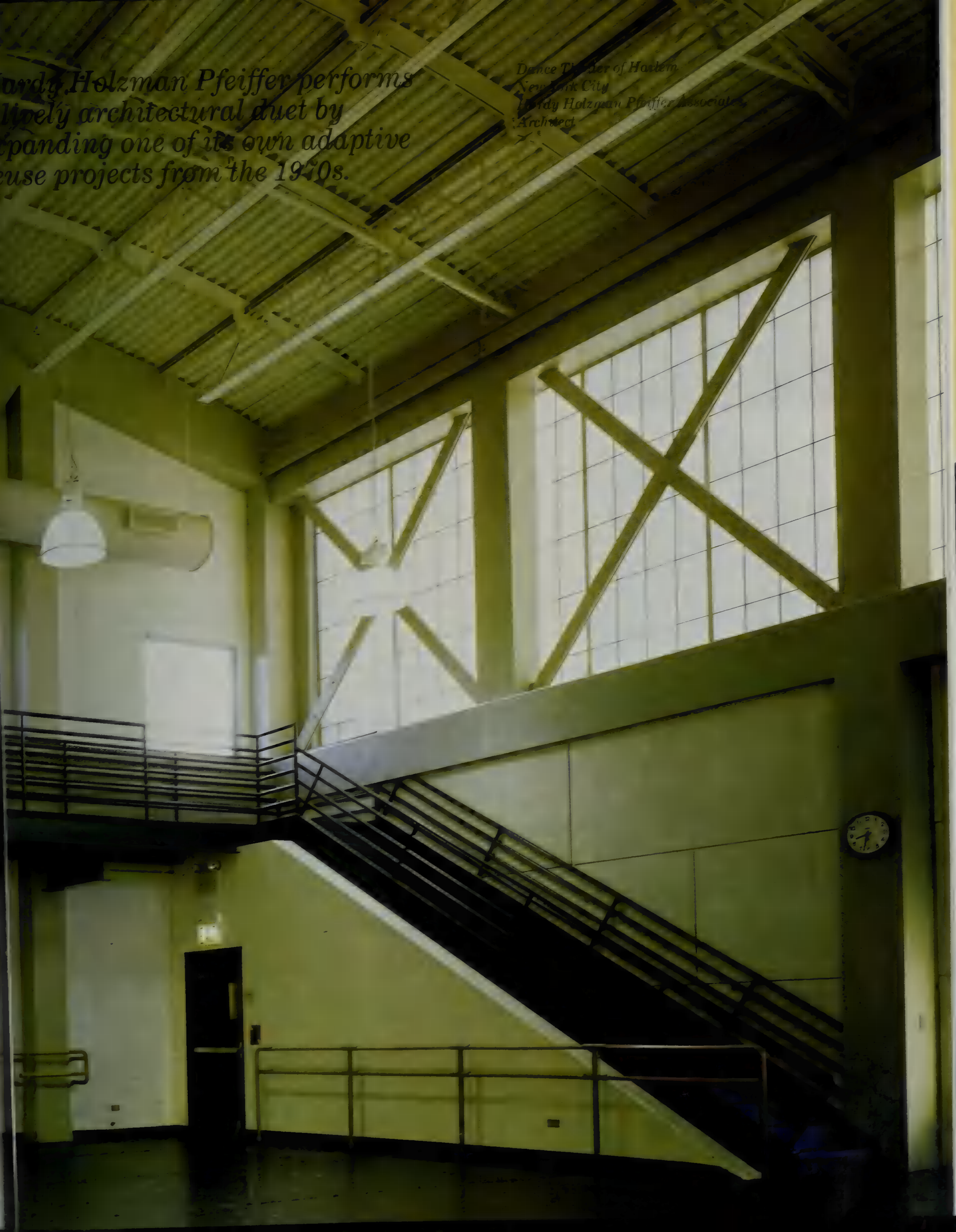
SECOND FLOOR

1. Offices
2. Lobby
3. Computer room
4. Editing rooms
5. Broadcast studio
6. Makeup/storage
7. UPS room
8. Storage
9. Conference
10. Clerical
11. Mechanical



FIRST FLOOR

Pas de Deux



ardy Holzman Pfeiffer performs
lively architectural duet by
panding one of its own adaptive
euse projects from the 1970s.

Dance Theater of Harlem
New York City
Hardy Holzman Pfeiffer Associates,
Architect

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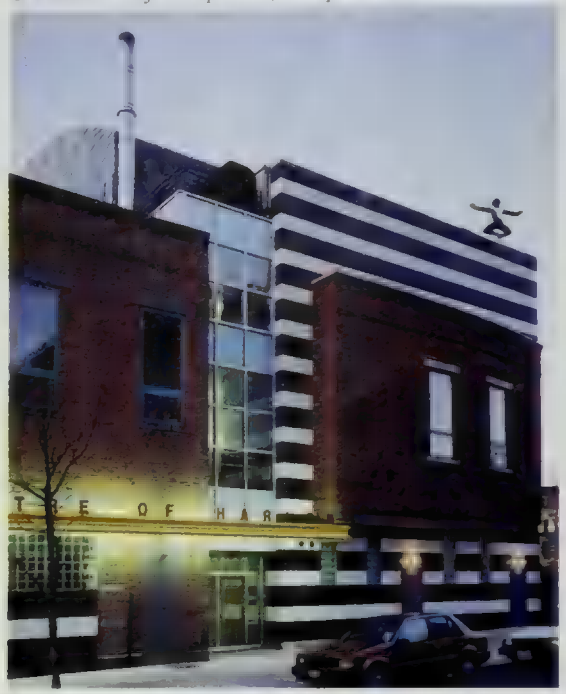

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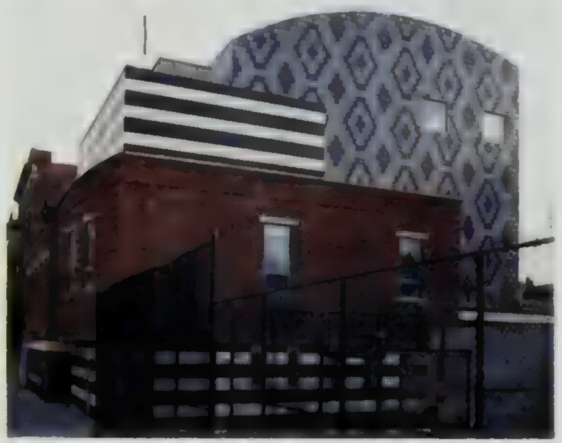
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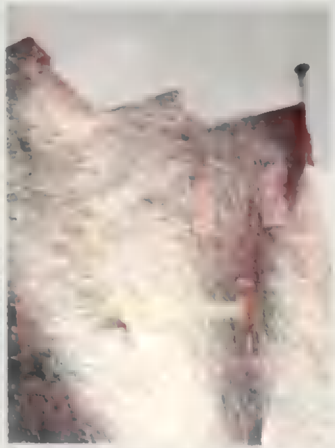

4

Facing 152nd Street in Harlem, the DTH building is evidence of the group's commitment to the community. DTH hopes to build production facilities [illegible] down on [illegible].

Continuity and change are hallmarks of the Dance Theater of Harlem, the acclaimed school and dance troupe that has grown by leaps and graceful bounds under the direction of a single driving force for all its 25 years. The same is true for its home, a two-story garage that Hardy Holzman Pfeiffer Associates converted into studios in 1971 and that has now been expanded and renovated by the same architects.

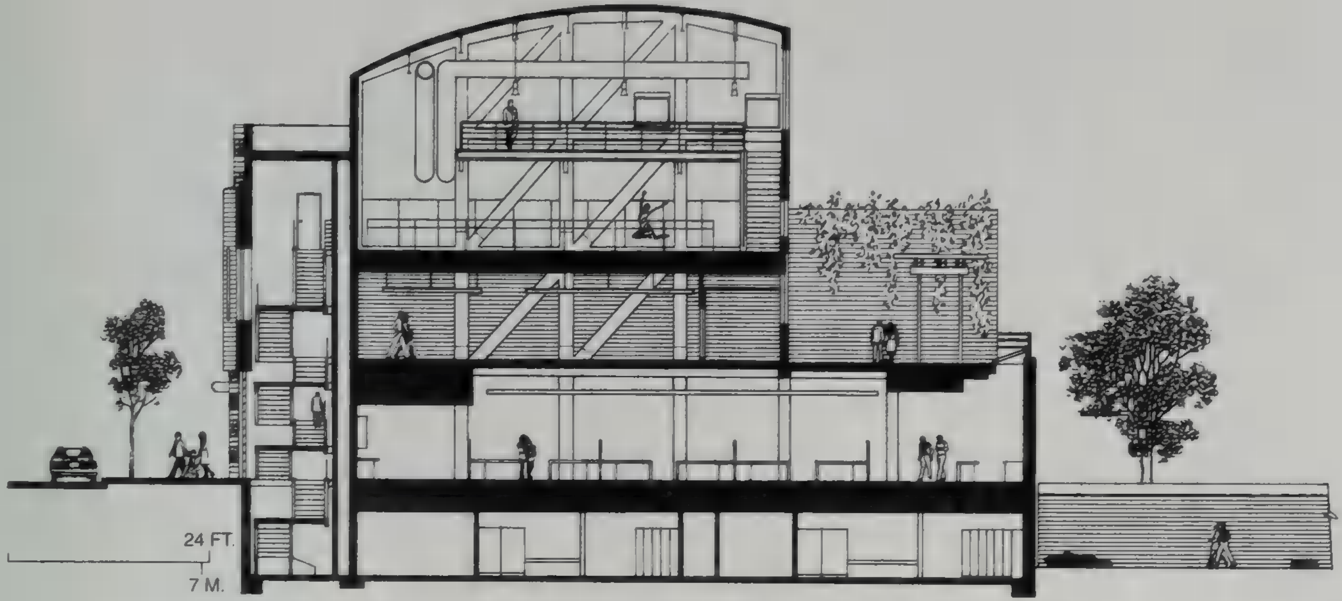
The new construction added 13,000 square feet of studio, office, and support space adjacent to the existing 15,000 square-foot building and gave the institution a higher profile with a great curving roof enclosing a top-floor dance studio. On both the outside and the inside, old and new buildings act as one, although vestiges of the past remain for all to see. "We wanted the buildings to relate to each other," explains architect Hugh Hardy. "But we didn't want the project to be so seamless as to imply that both buildings have always been there."

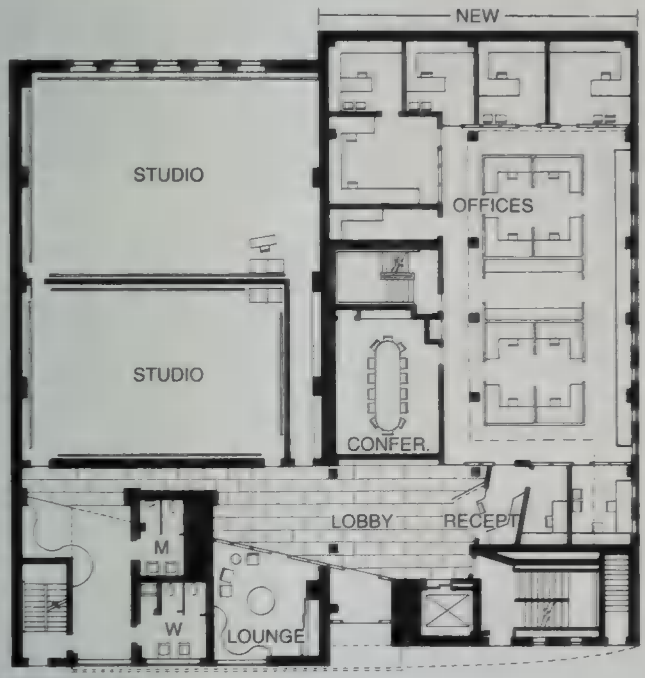
To distinguish new from old, the architects dressed the addition in materials such as black and white glazed ceramic masonry block and colored synthetic shingles set in a bold diamond pattern (left, 1 and 2). But to maintain the family resemblance, they also used sections of the same red brick as is found on the original structure (4). Because they were adding onto one of their own designs, Hardy and his associates felt freer to alter aspects of the existing building that didn't work well in an expanded facility. So they had no hesitation about changing brick and clear glass around the old entrance into masonry and glass block and straightening out some of the angles. "That was our angled period," jokes Hardy about the original design. More importantly, the new entry creates an expanded lobby (3) that accommodates more people and provides space for a parents lounge.

Before the expansion, the two major components of DTH—its school and its professional dance company—were squeezed together, says Charmaine Jefferson, the group's executive director. Today, professional dancers have their own locker rooms and a new third-floor studio (preceding pages), making it easier for school and company to rehearse at the same time. New office space on the first and second floors lets DTH have its marketing and development staff under one roof for the first time. Expanding the old facility entailed cutting passageways through load-bearing brick walls and adding steel columns for support. It also required an entirely new mechanical system with new ducts, boiler, and air-handling and chiller units. Existing dance studios were renovated with new flooring and, on the second story, new skylights. In a whimsical tribute to Arthur Mitchell, the man who founded DTH in 1969 and remains its tireless leader, the architects placed a weather vane in his likeness on the roof so he could move in the wind as gracefully as he does on the ground. *Clifford A. Pearson*

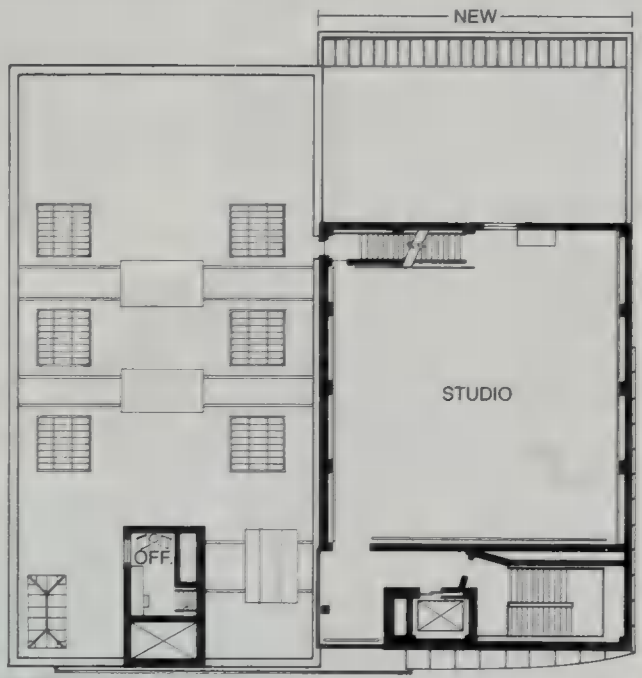
Credits

Dance Theater of Harlem
New York City
Architect: *Hardy Holzman Pfeiffer Associates—Hugh Hardy, partner-in-charge; Victor Gong, administrative partner; Stewart Jones, project manager; Peter Ogman, construction architect; David Johnson, project architect; Caroline Bertrand, Robin Kunz, interiors; Manuel Mergal, William Leeds, Evan Carzis, architectural team*
Engineers: *Peter Galdi (structural); Atkinson Koven Feinberg (mechanical)*
Consultants: *Construction Consultation Associates (code/zoning); VJ Desai (cost estimator); Specifications Associates (specifications)*
General Contractor: *A.J. Contracting Company*

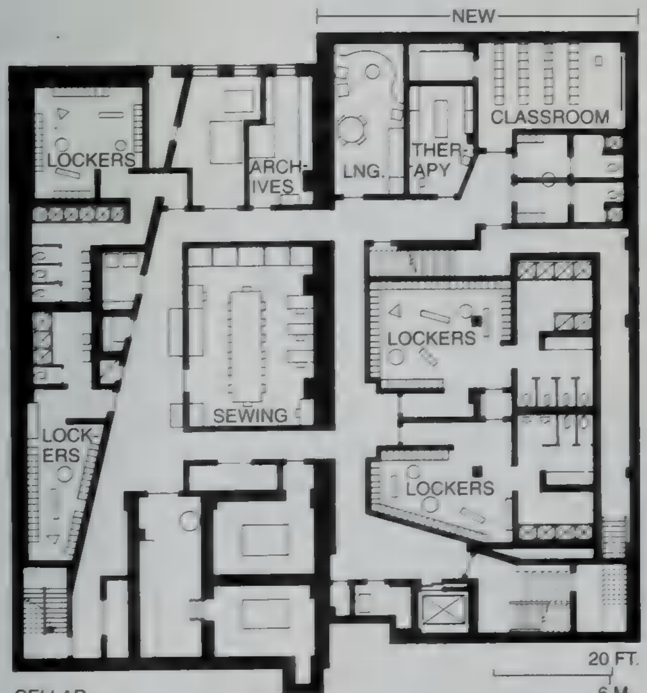




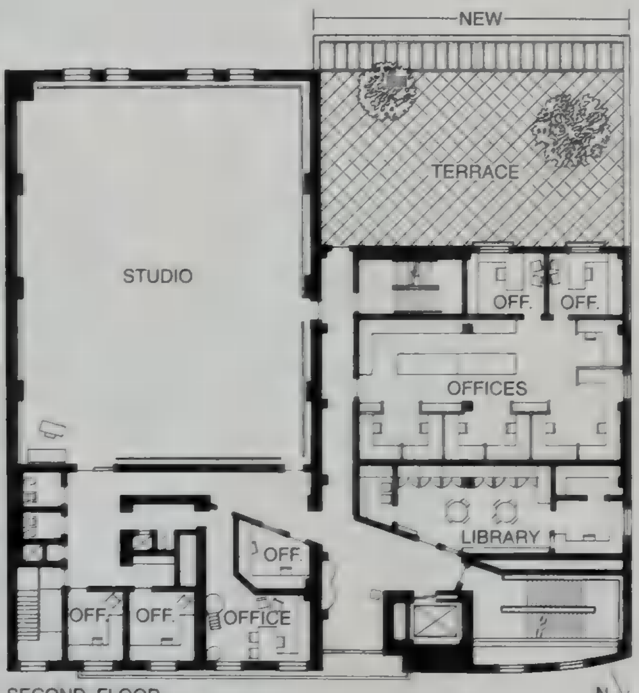
FIRST FLOOR



THIRD FLOOR

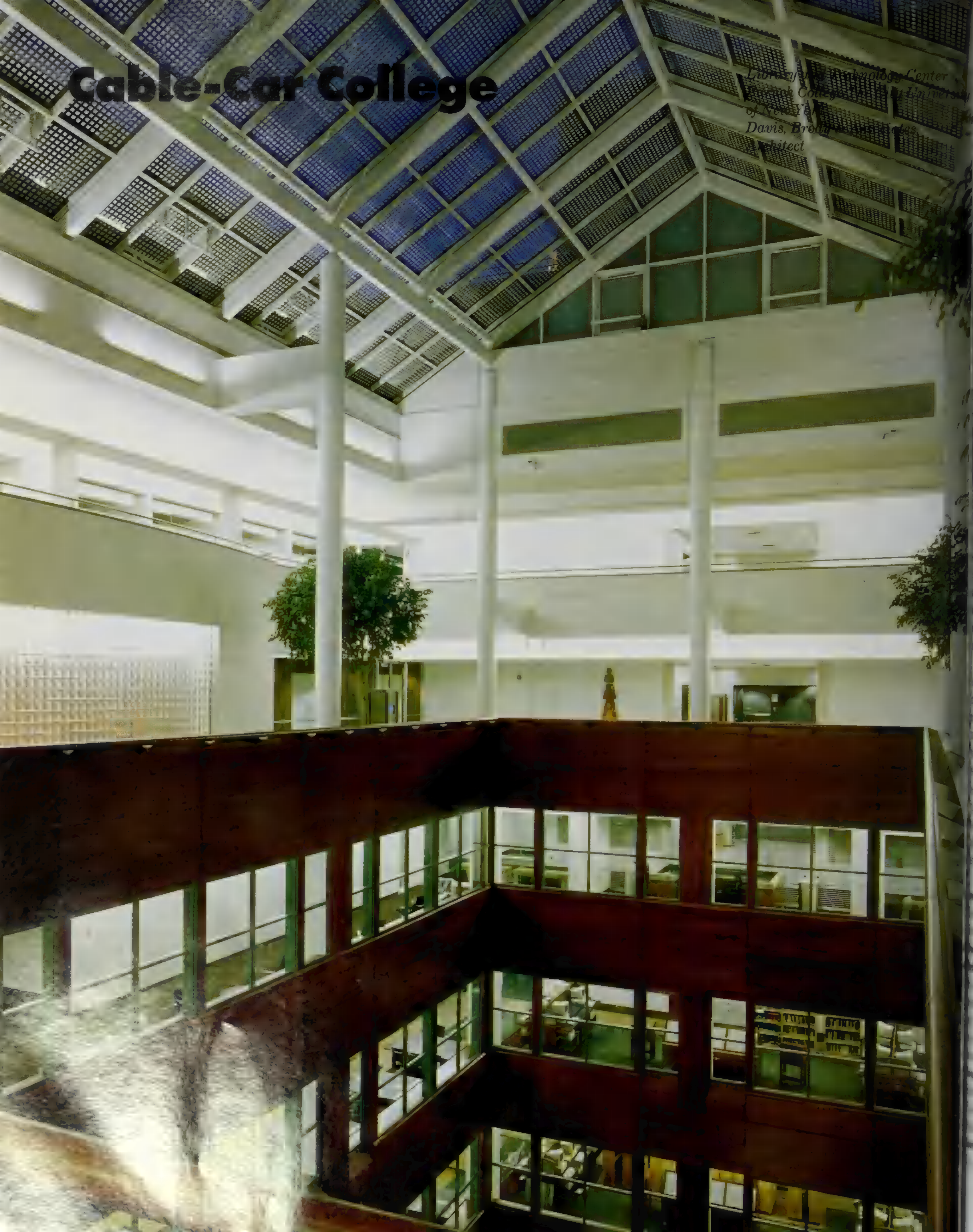


CELLAR



SECOND FLOOR

Cable-Car College



Library and Technology Center
Baruch College, The City University
of New York
Davis, Brody & Associates,
Architect

its face, Baruch College's new library is an exacting restoration of 1890s Italian Renaissance former cable-car drive station that once owered some five miles of track, using 36-foot-diameter, steam- ound drums. Inside, however, everything is up-to-the-minute as efits its new function of housing the latest in electronic communica- ons. Davis, Brody & Associates was commissioned to do a master an for the Baruch College campus to bring together facilities scat- ered through different buildings in a congested midtown Manhattan cation. Baruch, which is part of the New York City University ystem, offers business courses to the many students now seeking em. However, space was at a premium, since Baruch hadn't had a ew building in over 25 years. Davis, Brody pinpointed the college's ntiquated library as the first in need of a new home. The availability the massive block-through cable-car drive station, with six floors of ntal lofts above the engine room, seemed an ideal fit. A vacant lot to e north allows for future expansion with a building designed to ouse the remainder of the teaching program.

hile the interior finishes are new, the basic building is not. The cast- on structure and floors of shallow masonry vaults remain. So does e central light well, once open above the first floor, but now topped a massive new skylight. It serves as a college center for a campus at previously had none. Additions, which bring total square footage 330,000, include a new second floor inserted in the former engine om and a partial ninth floor above the original roof. The second or houses a reference desk and plug-in carrels for students' lap-top mputers orient users to the resources within. A percentage of rrels on the upper floors are currently hooked into the City Univer- ty's far-reaching computer-information system, which includes cess to Internet and all major financial-data systems. One day, all rrels will be on-line. The entire sixth floor is devoted to teaching udents to use computers and allowing them to work on stations that e beyond the capacities of their own systems.

nother vestige of the former building's exterior is the cherry panel- g of the atrium. It, together with the windows required by five city des, visually describes the former exterior walls, while lending a arm academic atmosphere requested by the client. (It also delin- tes where library facilities stop and a conference center and eneral school functions, such as record-keeping and admissions, gin on the seventh and eight floors.) Indeed, all finishes are surpris- g lush (see photo on following page), given public contracting dgets, and reflect the determination not only of the architects, but llege administrator, Marilyn Mikulskyk, to make quality and long- rm maintenance a high priority. *Charles K. Hoyt*

redits

ibrary and Technology Center
aruch College/The City University of New York
wner: *The Dormitory Authority of the State of New York*
rchitect: *Davis, Brody & Associates—Lewis Davis, partner-in- arge; William Paxson, Shirley Dugdale, Nathan Hoyt, associate rtners; Ted Schultz, project manager; George Rehl, project archi- ct; Eric Alch, Frank Calcagni, Gary Ensana, Lelia Gilchrist, aria Guamieri, Oscar Jobmann, Leon Joseph, Jerry Maffia, David anty, Gene Park, Michael Regan, project team*
nsultants: *Ewell W. Finley (structural); Syska & Hennesy/ ardie & Associates (plumbing); Brian Smith (specifications); sher, Marantz, Renfro, Stone (lighting); Jay Lucker (library); uilding Conservation Associates, Inc. (exterior restoration)*
ntractor: *Morse Diesel, construction manager; Anthony Marino rp. (phase 1); Trataros Construction, Inc. (phase 2)*

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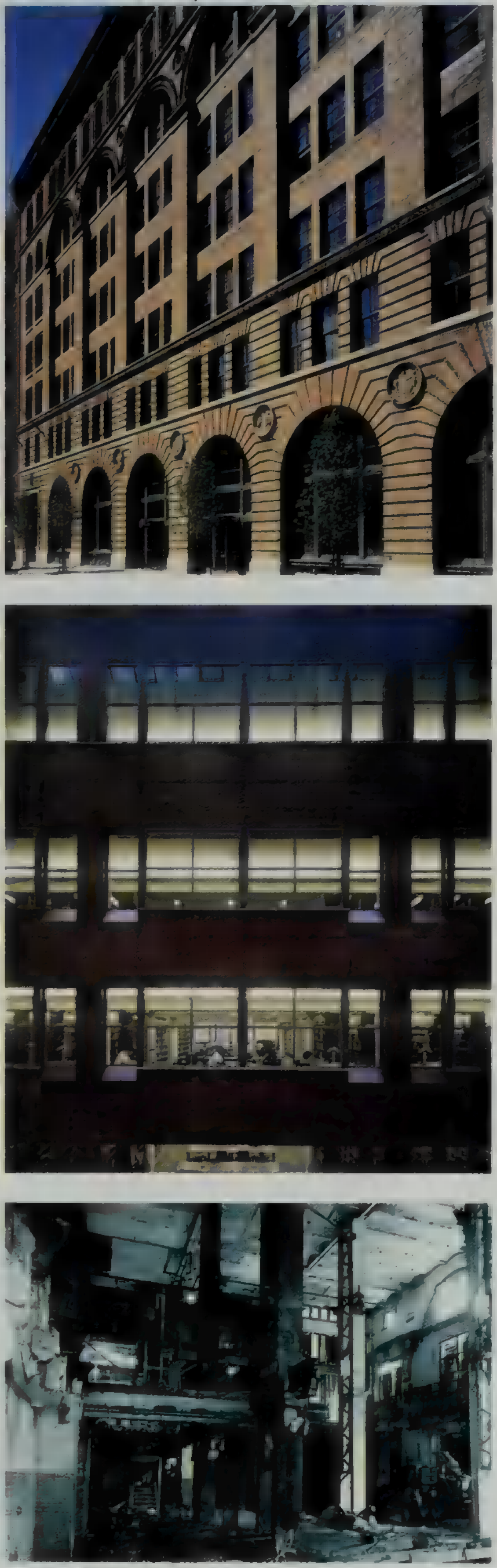
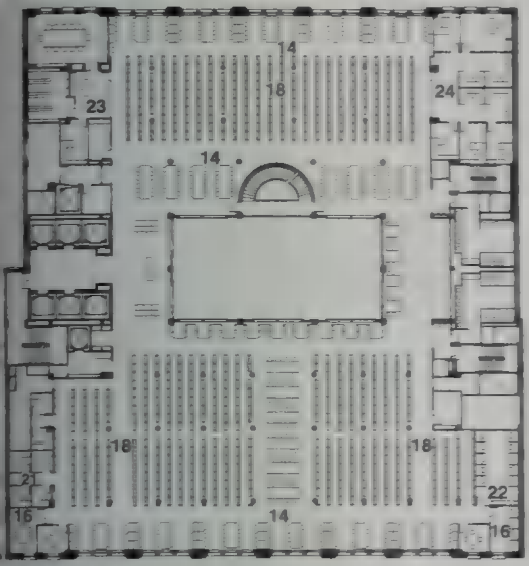
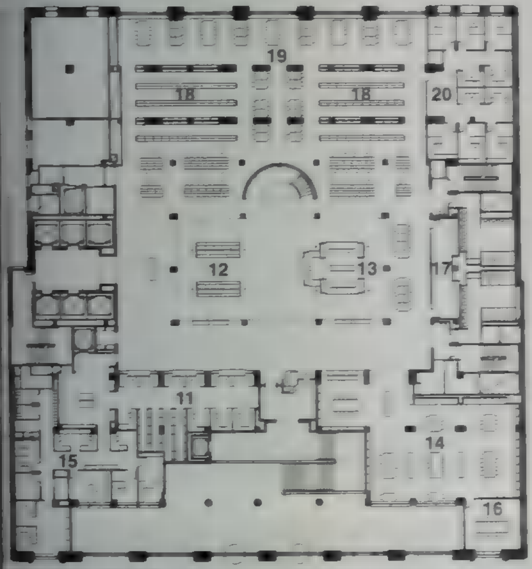


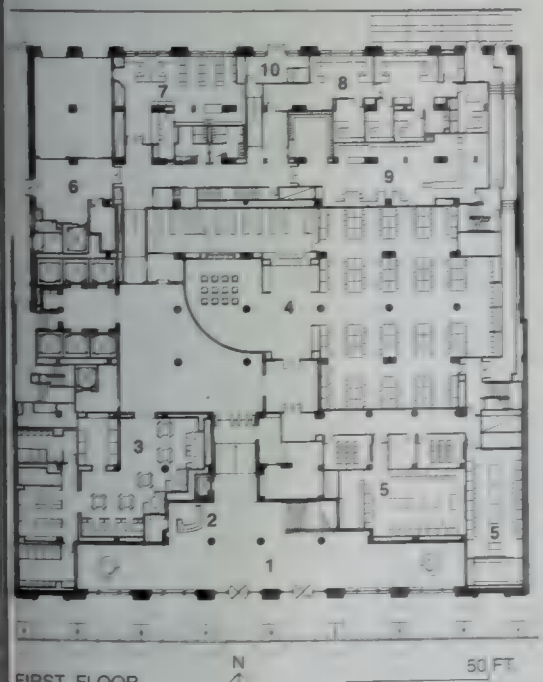
The careful facade restoration was prompted by the building's presence on the New York State Register of Historic Buildings. While the interior appears entirely new, the original cast-iron structure and masonry-vault floors were retained with some fireproofing and reinforcement. Wood paneling (opposite) stops below conference and general academic levels to differentiate them from the library.



FOURTH FLOOR



SECOND FLOOR



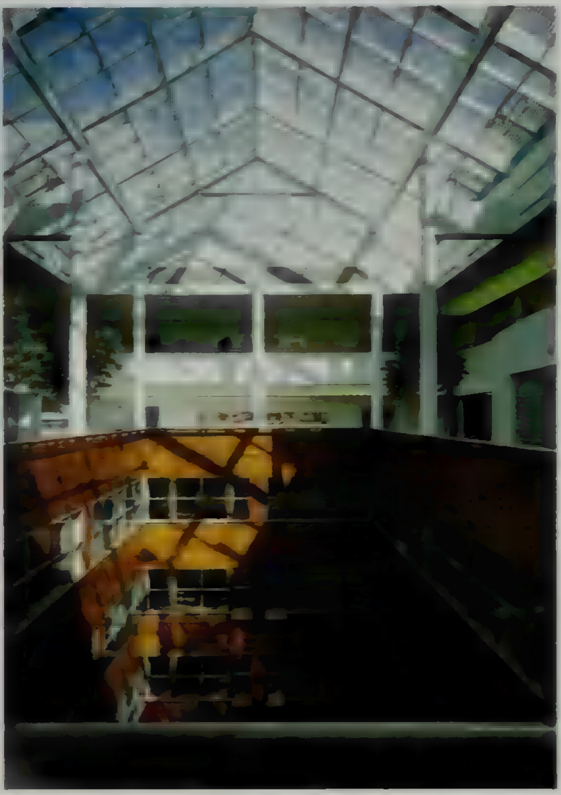
FIRST FLOOR

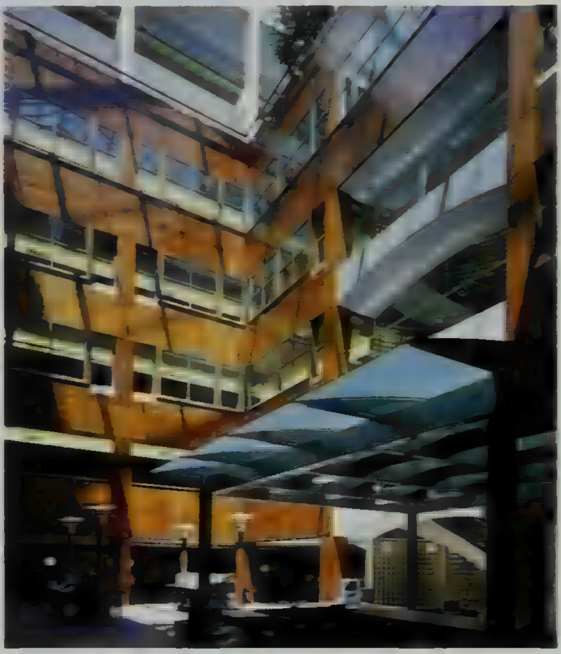
Students enter through a lobby (upper left overleaf) that reflects the high quality of the college's existing facilities in carefully maintained buildings—many from the 1930s. They pass straight ahead to a lounge and multimedia room, which encourages experimentation with all sorts of computerized imagery, or pass to the second level at the top of monumental stairs, where they enter the central atrium. This soars to "open space" under the skylight above (right top), and holds a choice of information-access mediums, including a reference desk (right center) or plug-in carrels for students' own laptops (right bottom).

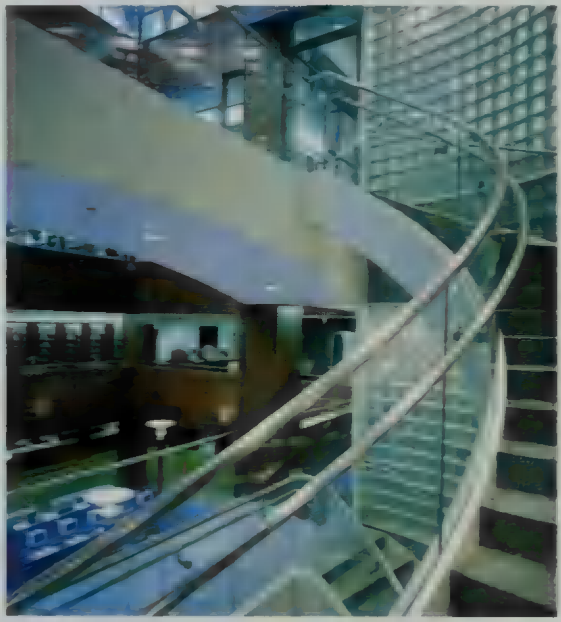
When the architects started design some years ago, there was little standard library furniture intended for the high level of computer involvement planned. Therefore, they designed their own—enough to start a whole furniture line, says Davis Brody partner Nathan Hoyt. This includes dictionary stands, tables, and carrels, all with an eye toward flexible cabling and long-term maintenance. Carrels have large chases below facing work tops. These are reached by removing perforated stainless-steel panels. Similar panels over acoustic baffles form privacy barriers at eye level. Tops on all cabinetry are 1 1/4-inch reconstituted slate. All wood is cherry.

The top floors hold general college functions, including a large flexible-use conference center (overleaf bottom), smaller conference rooms (where a downward view of the central stair is projected on a screen) and a faculty lounge behind arched windows.

1. Lobby
2. Information
3. Student lounge
4. Multi-media
5. Classroom
6. Loading dock
7. Receiving
8. Administration
9. Mail room
10. Service entry
11. Circulation desk
12. Computer files
13. Reference desk
14. Reading room
15. Director's office
16. Group study
17. Copying
18. Stacks
19. Seating
20. Reference staff
21. Faculty studies
22. Graduate carrels
23. Archives
24. Clerical

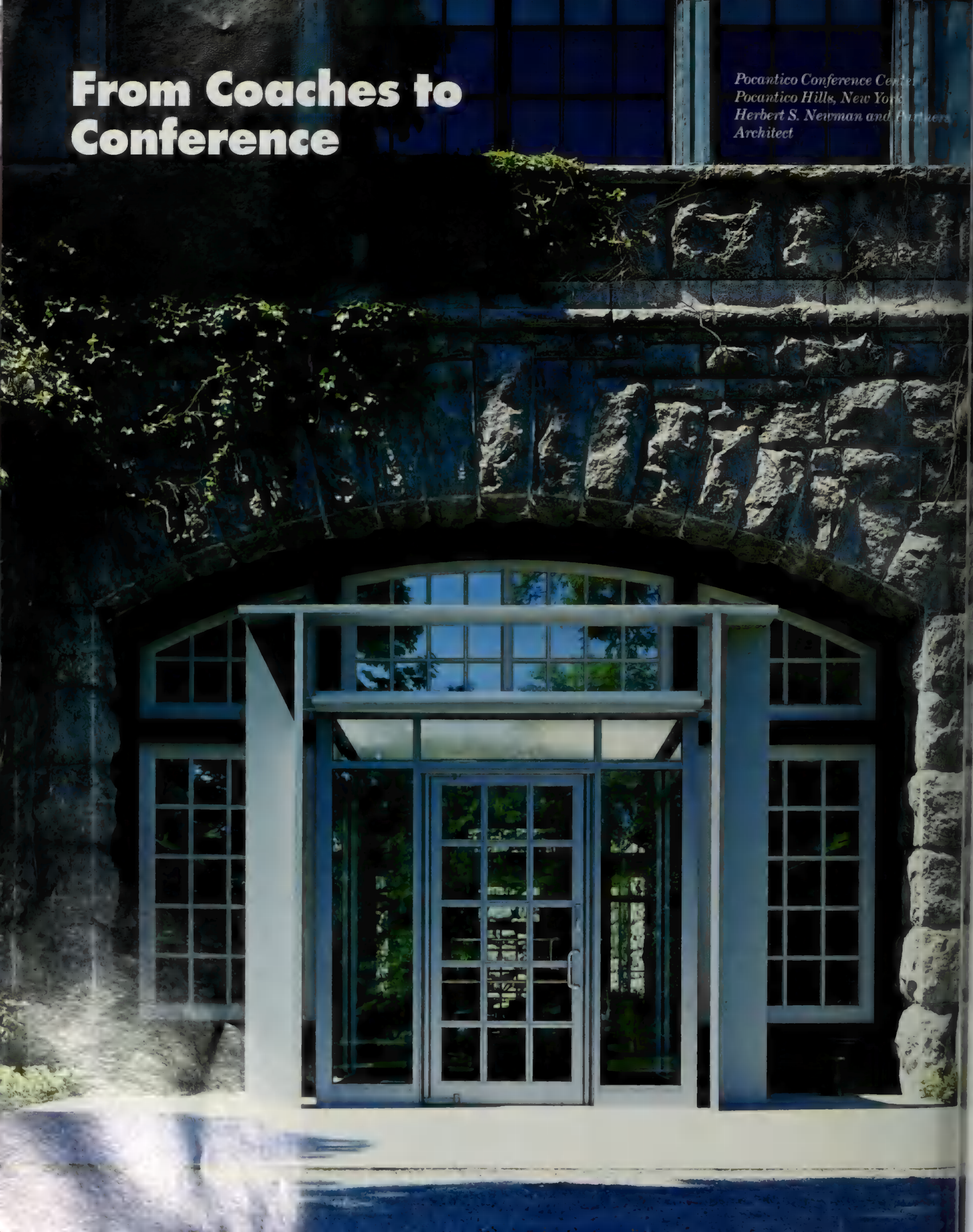






From Coaches to Conference

Pocantico Conference Center
Pocantico Hills, New York
Herbert S. Newman and Partners
Architect

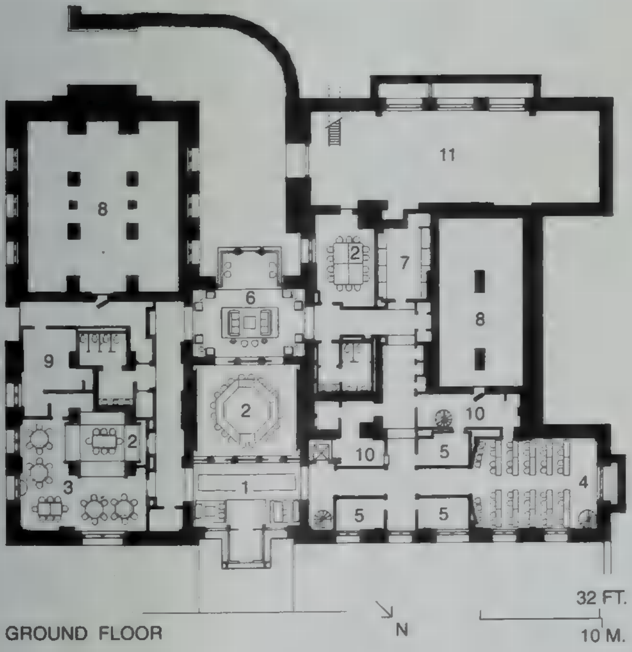


e heavy granite ashlar structure (top, right) began in 1902 as a barn house the Rockefeller family's coaches and later their automobiles, it took a 180-degree turn this year to end up as a key cog in the ocantico Conference Center. Run by the Rockefeller Brothers Fund r meetings tied to the Fund's philanthropic goals under an agree- ent with the National Trust for Historic Preservation, the center so comprises Kykuit, the big mansion used in turn by several Rock- eller households and now remodeled to house participants. The nter sits on 84 acres of gardens 25 miles north of New York City.

hile the barn's upper floor is given over to the family's collection of rriages and vintage automobiles, it is the lower level, dedicated to nferences, that saw the most dramatic transformation. The archi- cts admired the rugged quality of the loadbearing masonry, brick ults, and arched openings (opposite page), but had to deal as well ith what was, in their words, "a chaos of stable/garage spaces, filled ith random partitions, rough finishes, and a tangle of pipes and nduit." Those heavy walls suggested the powerful parti, whereby e new spaces are essentially insertions or "linings" within the exist- g walls. These insertions of wood, metal, and glass (seen typically in e main entrance lobby, center, right), create an atmosphere of bdued colors and textures and pleasant scale within the huge space.

he room configuration meets conference needs through a series of berly elegant meeting rooms of various sizes, the ability to demount alls to form breakout rooms, a lecture room (bottom, right), and od service. The lecture room is the least successful of the spaces, corporating as it does a somewhat forbidding perforated mesh iling, a tight little circular stair left over from the old barn, uncom- rtably high wainscoting, and a regimented series of desks.

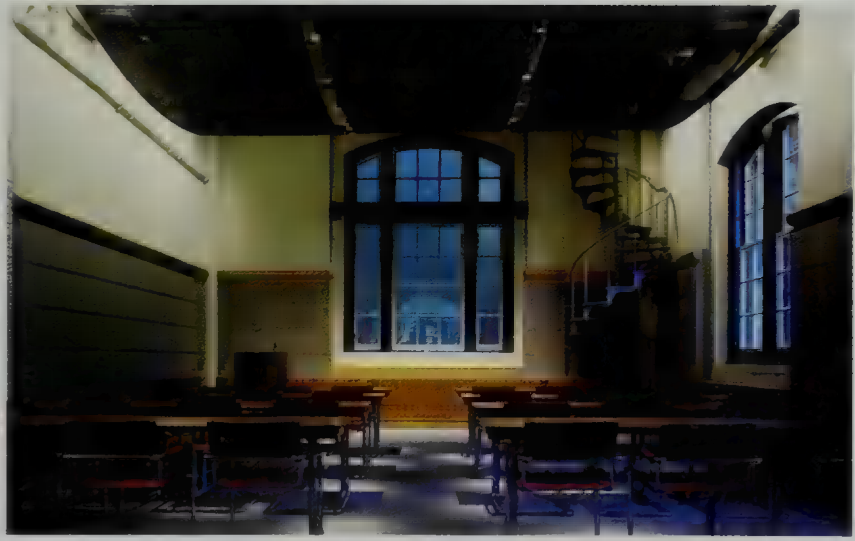
y contrast, the brand new portals that determine the main axis are tractive, perfectly scaled glass and steel compositions that make rival a highly satisfying experience. *Stephen A. Kliment*



GROUND FLOOR

1. *Entry*
2. *Conference*
3. *Dining*
4. *Lecture*
5. *Office*
6. *Loggia*
7. *Prep Room*
8. *Vault*
9. *Kitchen*
10. *Support*
11. *Mechanical*

© Norman McGrath photos



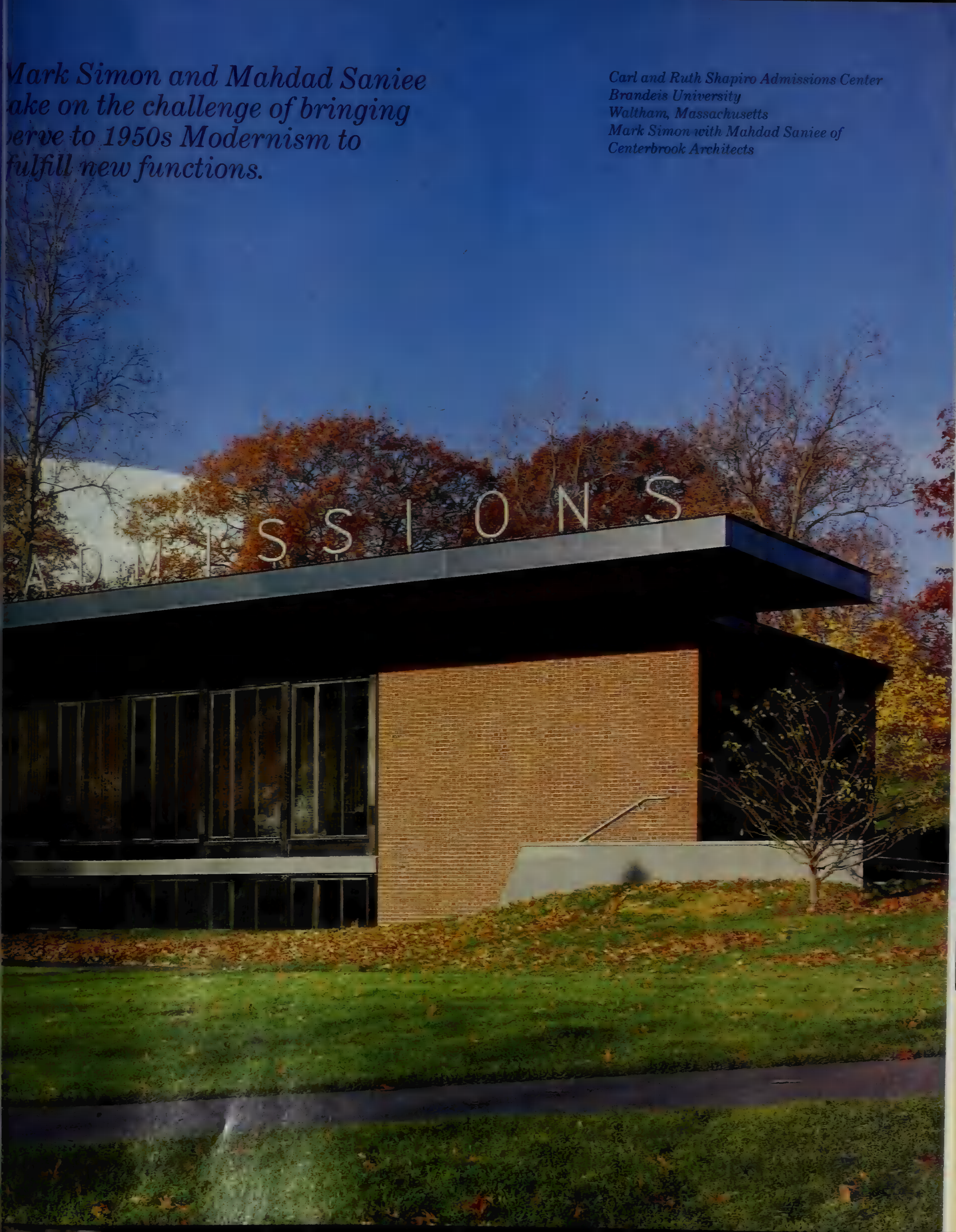
Credits
Pocantico Conference Center
Pocantico Hills, New York
Owner: *Rockefeller Brothers Fund*
Architect: *Herbert S. Newman and Partners—Herbert Newman, architect in charge; Joseph Schiffer, project manager; Nathan Topf and Peter Clement, project architects; Gwen Emery, interior designer; Steve Lapin and Ariane Cuenoud, designers*

Consultants: *Martin Horton & Associates (structural); Flack+Kurtz (mechanical, electrical); Sylvan R. Shemitz Associates (lighting); Zion & Breen (landscape); H. B. Fishman & Co. (roofing)*
Owner's Representative: *Lehrer McGovern Bovis, Inc.*

Enticing Admissions

Mark Simon and Mahdad Saniee
ake on the challenge of bringing
erve to 1950s Modernism to
fulfill new functions.

Carl and Ruth Shapiro Admissions Center
Brandeis University
Waltham, Massachusetts
Mark Simon with Mahdad Saniee of
Centerbrook Architects

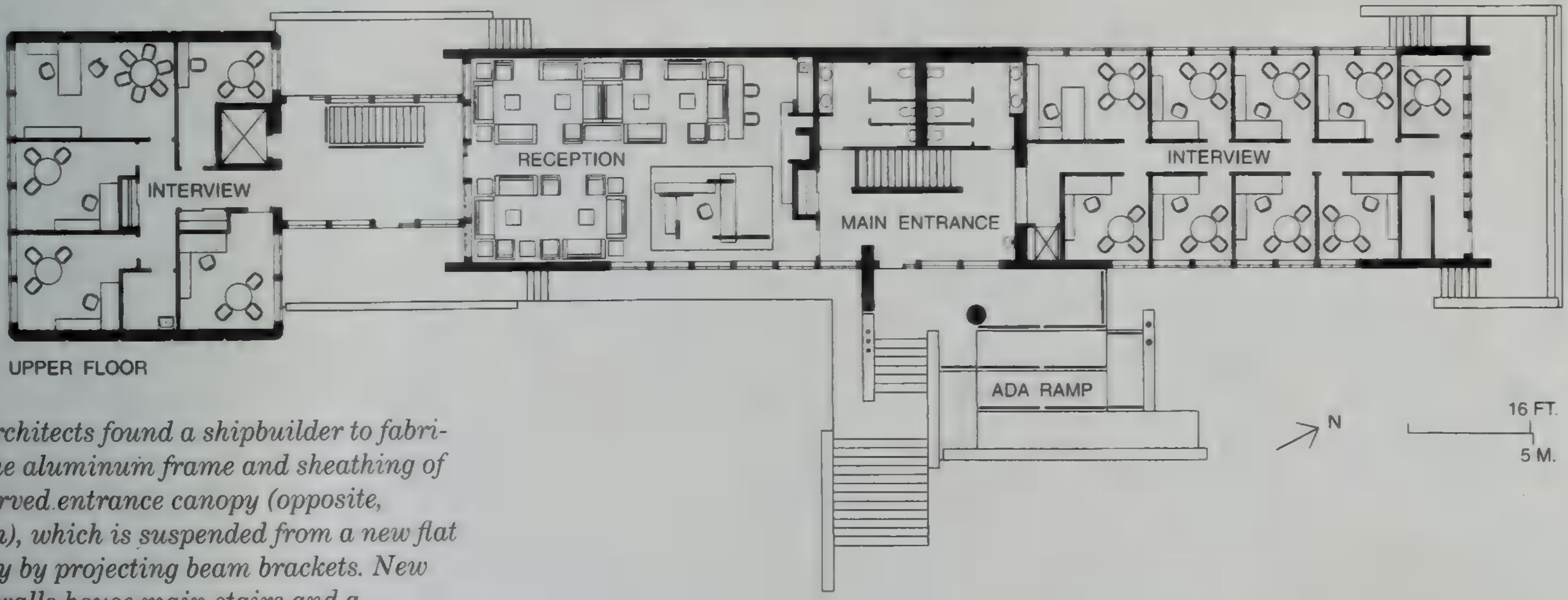


randeis University occupies a leafy Modernist campus outside
Boston. In recent years, its administrators had come to realize the
ame need to compete for students felt by many educational institu-
ions. Yet its all-important admissions office was hidden on the third
loor of a building far from the campus entry, while one of the first
uildings prospective students saw instead was a tired utilitarian
tructure built in the 1950s to shelter commuters (photo below left).
Rather than build still another structure for admissions in this highly
isible location, the university and two enthusiastic donors settled on
urning the existing ugly duckling into a welcoming structure, which,
ided by architects Mark Simon and Mahdad Saniee's swooping new
ntrance canopy, resembles a swan.

ndeed the upper main floor of the 10,000-square-foot existing build-
ng was ideally suited to its proposed use. It required minimal
nterior alteration to accommodate a program of a reception room
bottom right), presentation hall, conference rooms, and 14 interview
ffices (center). However, the location of processing and clerical
ffices on the floor below caused the administration some anxiety: It
ame dangerously close to resembling a basement. Simon and Saniee
dded lower-level glazing to the north (opposite top) and enlarged the
windows on the south entrance front by dropping the grade, which
lso gave the building more presence. Other interior changes includ-
d new finishes, updated systems, and some custom furniture,
ncluding the Brandeis Boogie-Woggie coffee table that honors either
Mondrian or Rietveld, muses Simon. Inside and out, the building is
neant to convey good humor and put prospective students at ease.

The real design challenge was to make the exterior lively, while maintaining the International Style of the surrounding campus—all without making such radical changes that the conservational concept of adaptive reuse would be lost. Among functional problems, wide steps facing the main road ran into a blank wall. No one could find the front door and there was no protected area outside it where prospective students could assemble before touring the campus. The architects ran a flat canopy across the facade shielding south-facing windows and added skylights to make the area at the front door more appealing. They marked this with the new swooping canopy (opposite bottom) and a series of low brick walls that contains both stairs and handicapped ramps. Finally, they topped their composition with stainless-steel letters that leave little doubt what this building is all about.
Charles K. Hoyt

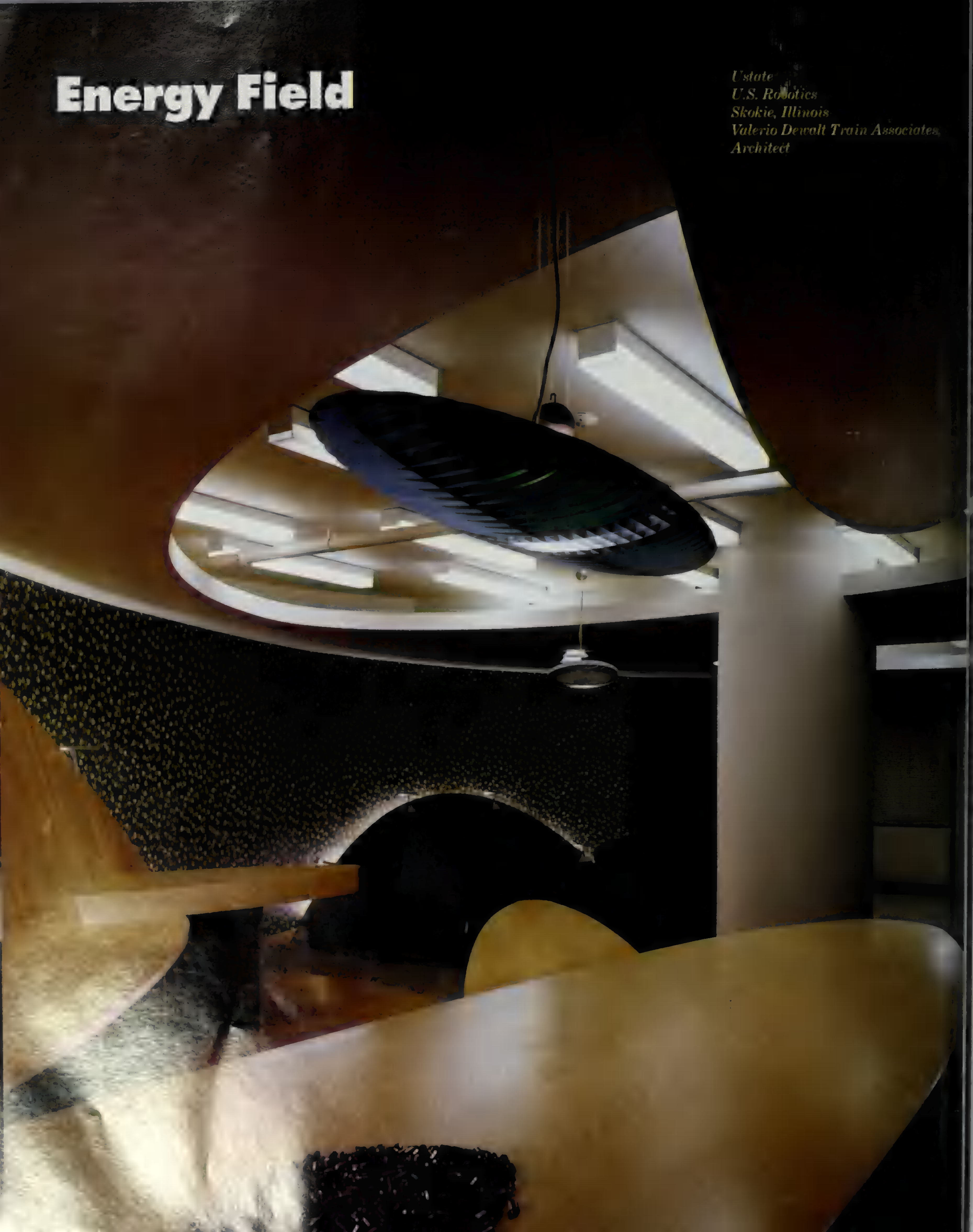
Credits
Carl and Ruth Shapiro Admissions Center
Brandeis University, Waltham, Massachusetts
Architects: *Centerbrook Architects—Mark Simon, partner-in-charge; Mahdad Saniee, project manager; Michelle La Foe, Sheryl Milardo, Darin Cook, Elizabeth Disalvo, John Doyle, design team*
Engineers: *Besier Gibble Norden (structural); Robert Van Houten (MEP)*
Consultant: *Morgan Wheelock (landscape)*
General Contractor: *Brandeis University/Twilight Construction*



'he architects found a shipbuilder to fabri-
ate the aluminum frame and sheathing of
he curved entrance canopy (opposite,
ottom), which is suspended from a new flat
anopy by projecting beam brackets. New
rick walls house main stairs and a
andicapped ramp.

Energy Field

Ustate
U.S. Robotics
Skokie, Illinois
Valerio Dewalt Train Associates,
Architect



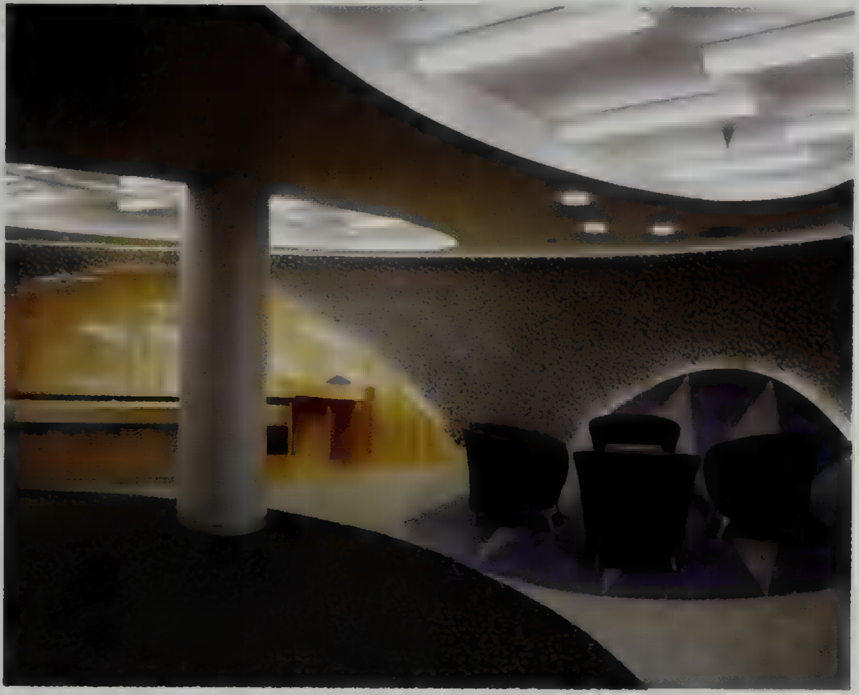
e Valerio's designs for U.S. Robotics are a portrait of the company. s business grows, so does Valerio's metaphor. Once primarily a odem manufacturer, U.S. Robotics has concentrated its more recent fforts on producing inter-networking equipment. Likewise, Valerio's revious project for the Skokie, Illinois-based company, its U2 manuacturing headquarters in a bland modern box enlivened by tilted lywood columns and soaring plywood arches that display a hyperinetic energy [RECORD, September 1993, pages 84-89], has been ppended by consumer division Ustate, where a grid of interior treets organize and interconnect work areas spread over a vast 170-oot by 250-foot floorplate.

ocated in another bland box, the former Allstate Insurance Buildg, Ustate contains the company's growing Personal Communiations department. Remaking what was once essentially a wareouse of people, without sacrificing space or flexibility, was the hallenge given to Valerio and associate David Jennerjahn. Says U.S. obotics' Liz Ryan: "This is a high-volume, fast-paced division that equires easy communication and the design needs to reflect that."

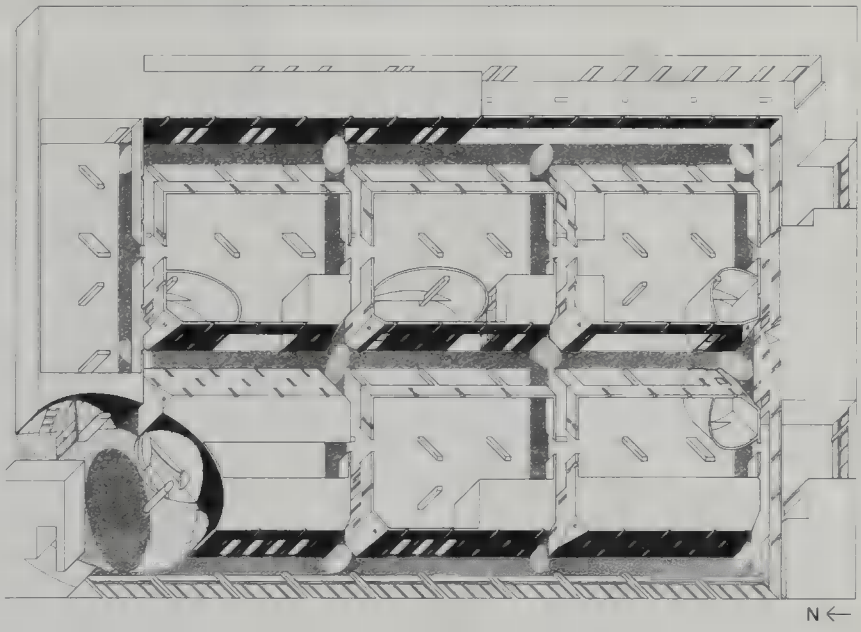
We invented significance where there was none," says Valerio of his trategy. After laying out streets that define separate office zones, he ought to further the contrast between "inside" office areas and outside" corridors by carving into 9-foot 6-inch-high ceilings. By reaking through the structural concrete deck along the hallways, the rchitects created 11-foot-high circulation swaths, which are lit from e sides. The "sunny" south and east sides of the street are painted a ght green that looks almost white when washed by the existing fluoescent fixtures, which were relamped with warmer, yellow tubes. The hady" north and west sides are painted steel blue.

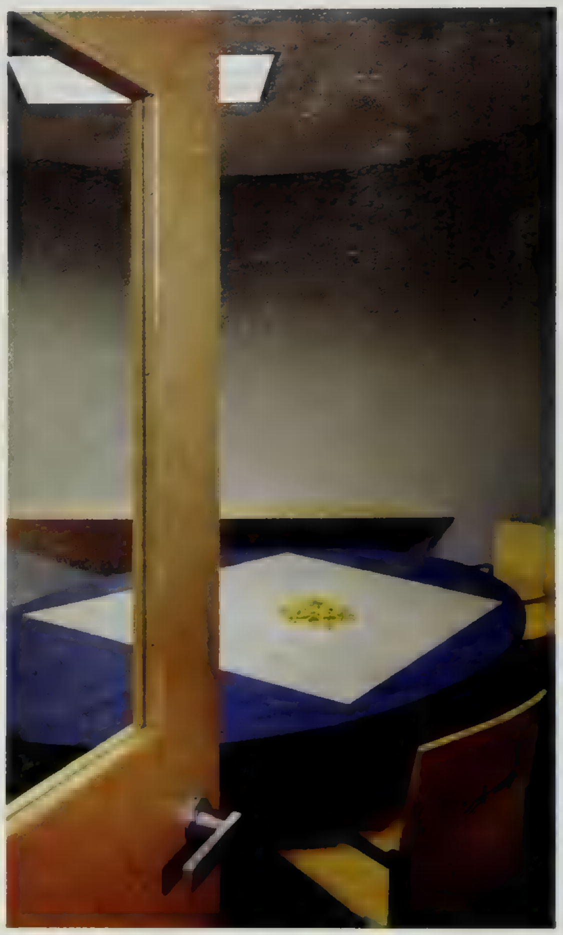
t the intersection of two streets, the architects forced a collision of eometries by wedging elliptical forms into the orthogonal grid, creting the impression of energy bursts. In reaction, walls lean, soffits rve, and carpeting shifts patterns to leave an oval trace. Scattered cross the floor is a series of conference rooms, also oval in shape, at in plan (following pages) resemble scouts of the reception-room other ship (photos opposite and above right). Here, stacked rfboard-like panels of maple establish on entry a daring corporate nage of exuberance. "The company is interested in energy and is riven by the energy of its staff," explains Valerio. "It's supposed to ok like its out of control, almost." *Karen D. Stein*

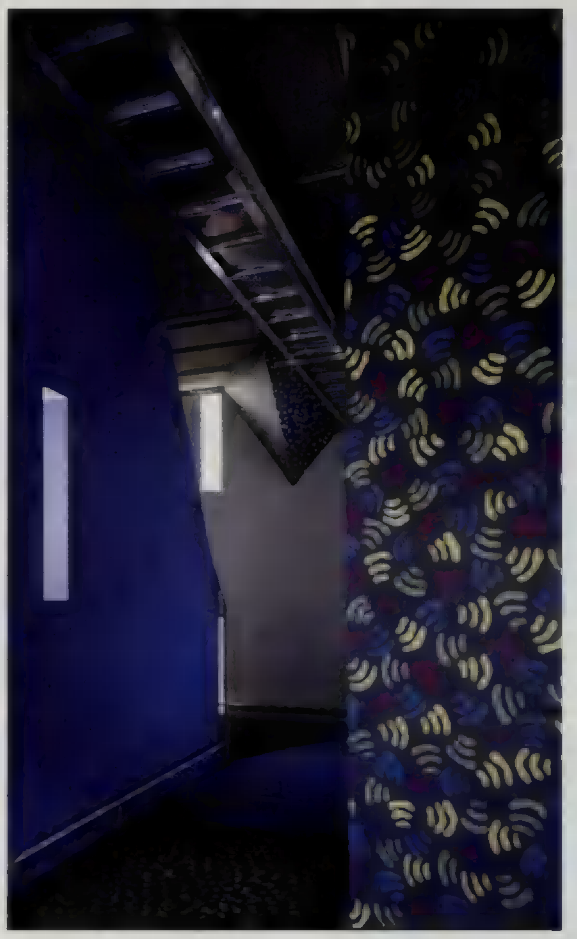
©Barbara Karant/Karant + Associates photos

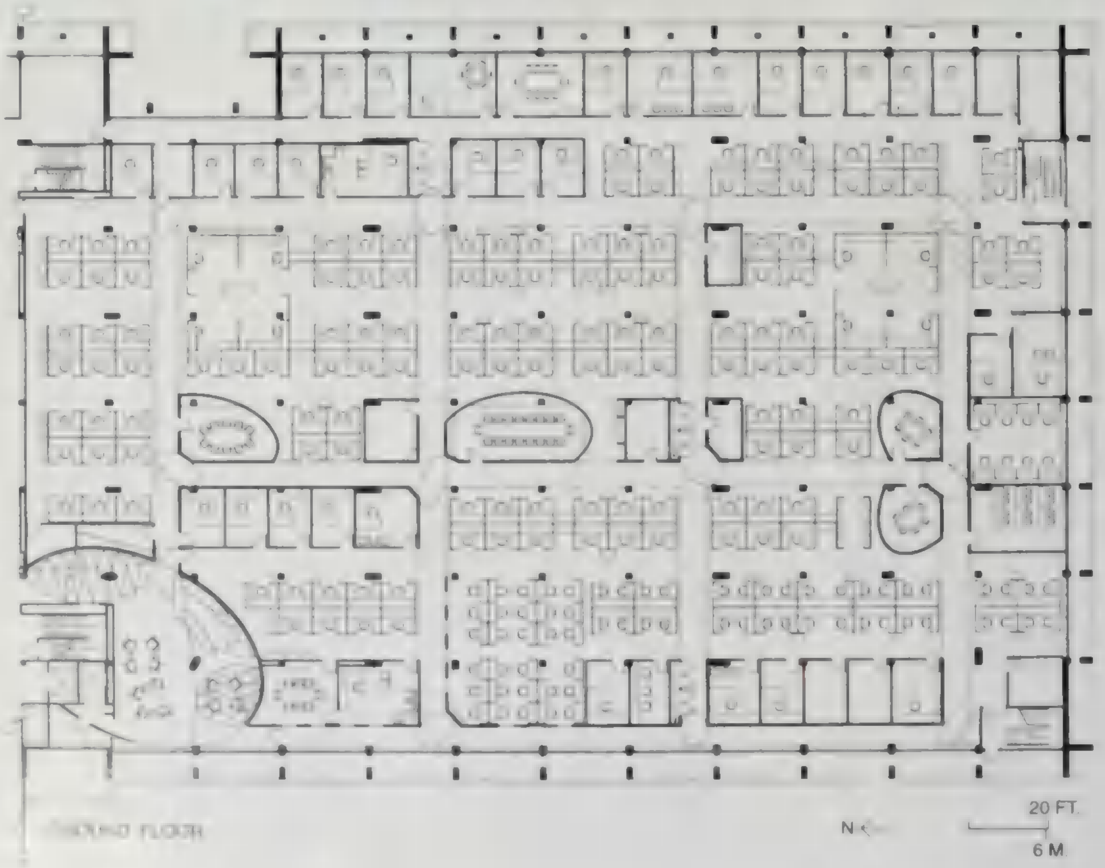


The renovation of the former Allstate Insurance building, constructed in 1958 (photo left), included replacement of single-pane windows with more energy-efficient double-pane windows. Hvac and lighting systems had been redone by Allstate in 1985.





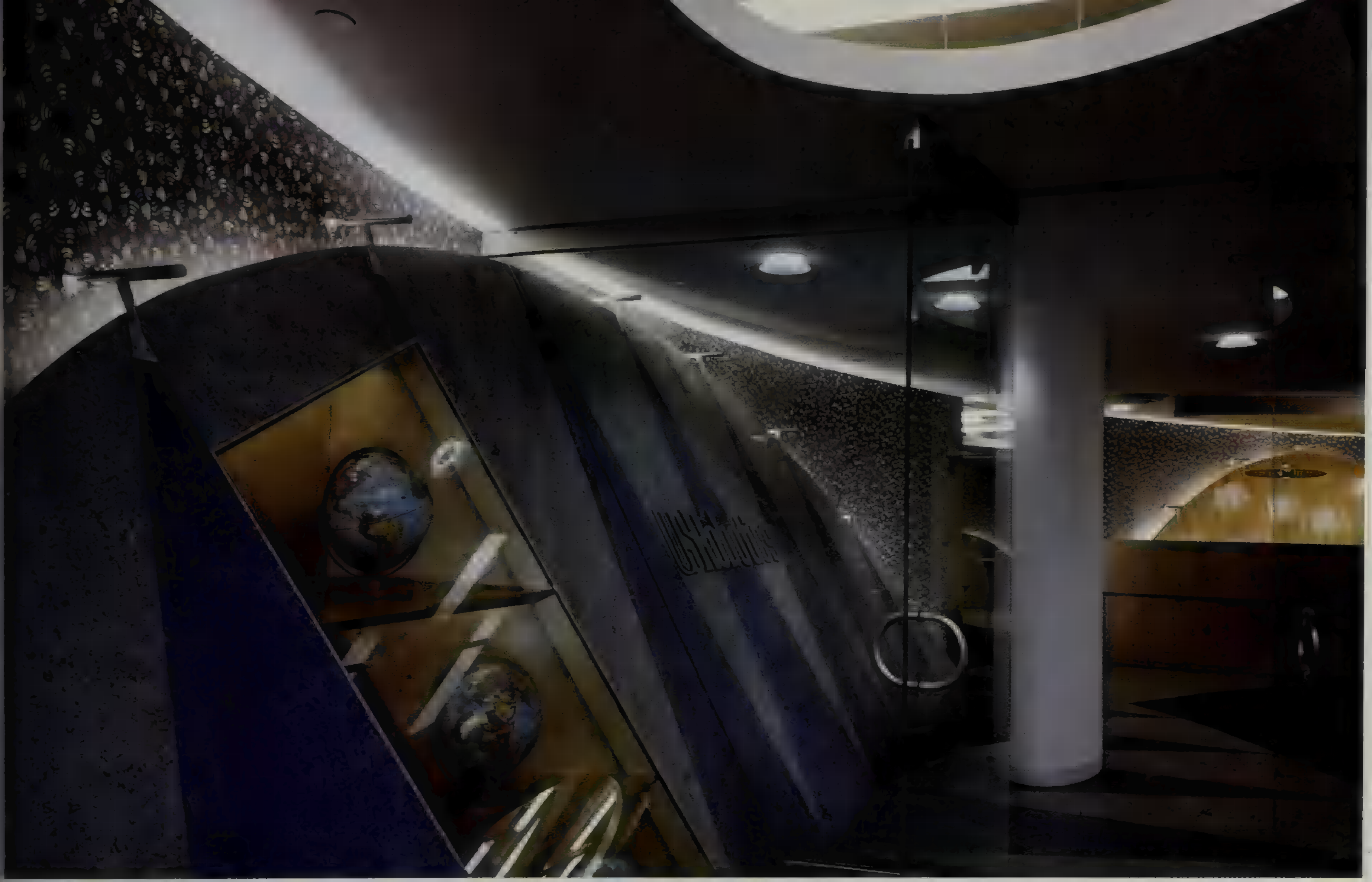




By limiting the material palette to a modest array of birch panels, colored paint, and carpeting, Valerio was able to keep project cost for the 74,000-square-foot project to a low $18 per square foot. To animate cavernous spaces, walls are stenciled to match carpeting (opposite).

In some areas, soffits were added to mask particularly unsightly mechanical equipment or to help define separate office zones. Slots of light in the corridors and exposed ceilings differentiate "outside" communal areas from private offices and workstations (left).

Credits
Ustate
U.S. Robotics
Skokie, Illinois
Architect: *Valerio Dewalt Train Associates—Joseph M. Valerio, partner-in-charge; David R. Jennerjahn, project architect; Randall S. Mattheis, Nancy Willert, Michael Cygan, Louis Lovera, Mark Demsky, project team*
Engineer: *WMA Consulting Engineers (mechanical/electrical/fire protection)*
Consultant: *Desks, Inc. (furniture)*
General Contractor: *Turner Construction Company*



Focus on: Turning Ordinary into Extraordinary

In keeping with the subject matter of this month's Building Types Study, Focus on shows true diversity in a broad range of adaptive reuse projects. Two projects do have similarities. Mitchell Kurtz's Arts Bank and Kieran, Timberlake & Harris's Rock Hall display a deft insertion of performing-arts facilities into monumental period spaces designed for entirely different uses, while keeping the original character intact. In Moore Street Market (below), Hirsch/Danois Architects have turned a hodge-podge of individual vendors' booths into a cohesive space that has become a neighborhood mecca. To create a new chemical building for Indiana University, Harley Ellington

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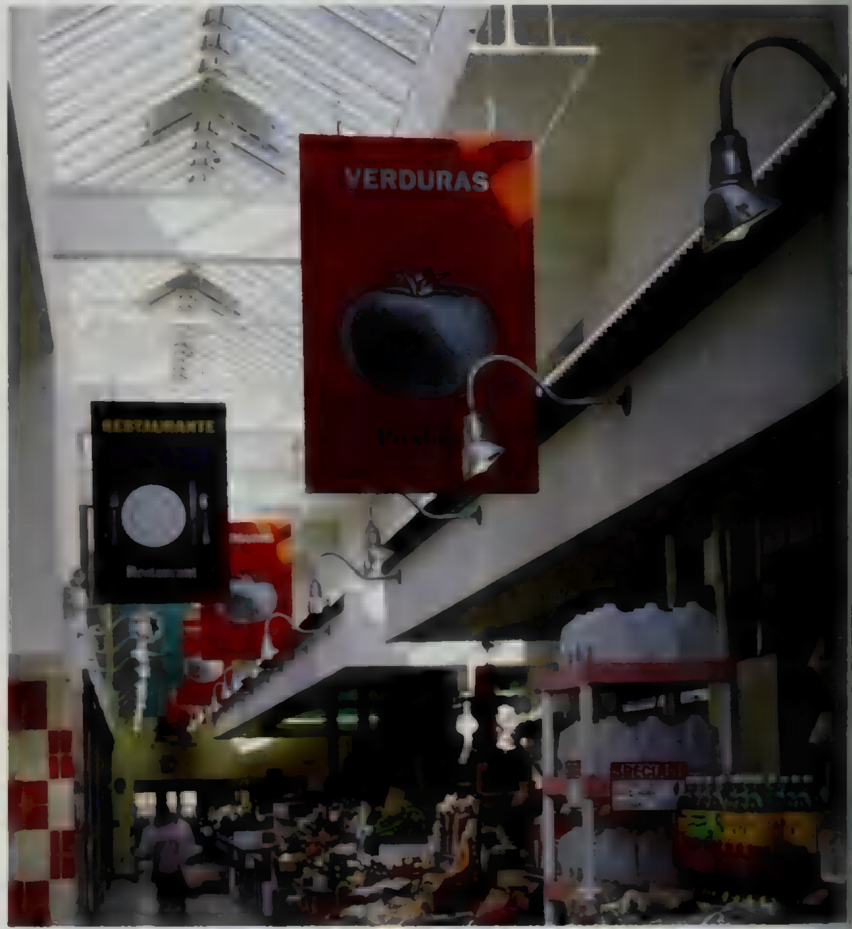
Moore Street Market

Brooklyn, New York
Hirsch/Danois Architects, P. C.
Architect

A lively place for buying food not found in a supermarket
During the 1930s, New York City completed a program of building identical bland brick boxes in far-flung neighborhoods to house grocers and other types of peddlers who once sold from pushcarts. Inside all was chaos. Large coolers scattered casually about the floor created a warren of spaces. Business was conducted from wood stalls.

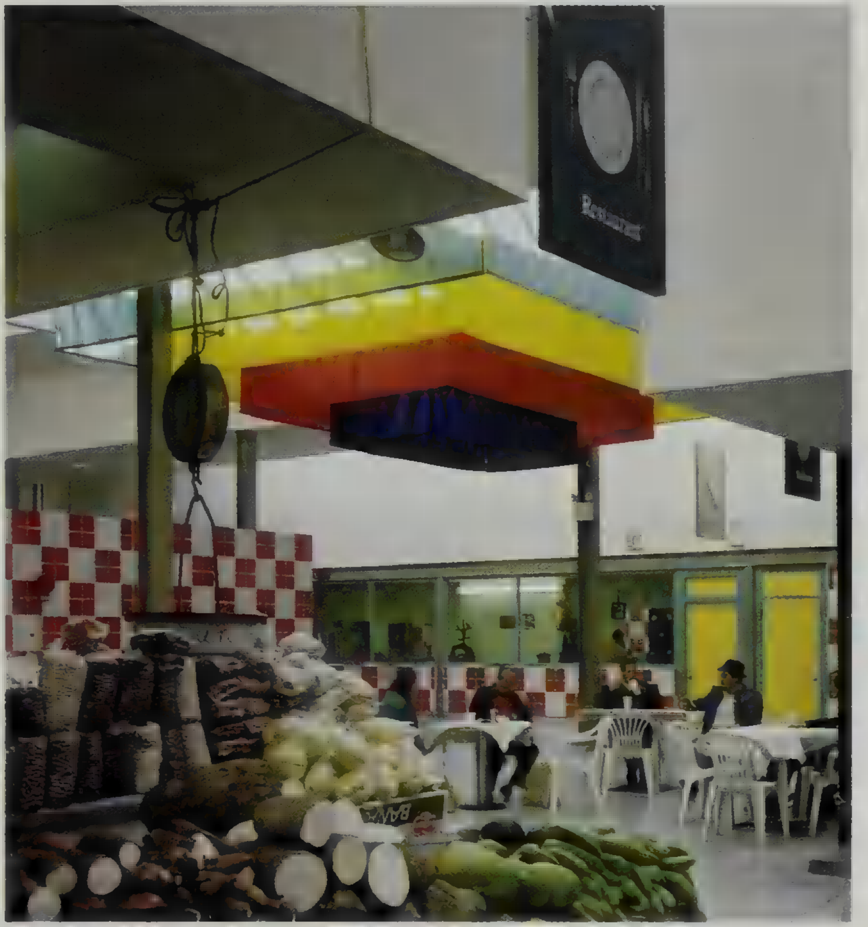
Recently, the city set out on a program of upgrading the markets with the goal of encouraging trade for the small businesses within. Hirsch/Danois won the commission for Moore Street in a competitive RFP process in part because David Danois had grown up near another such market and was familiar with how they functioned. Moore Street Market is located in a Hispanic neighborhood in Brooklyn. Grocers sell produce from South America with a special emphasis on edible roots of every description. The architects' main goal was to create a cohesive interior space that would attract customers. The most important step was to relocate the coolers to a little-used basement, which is now accessible down two new flights of stairs. The next step was to place the grocers with their eye-catching wares in new open stalls in the center of the room and dealers in other goods, such as religious objects and clothes, in spaces along the exterior where the full-height walls and roll-down gates they required for security would be out of the way of an open vista. The architects' design for the open stalls includes dropped-canopy ceilings that hold lighting and create an indoor-outdoor effect under the bright skylights. [illegible] now stand on raised floors that allow them to keep an eye on the full perimeter of their spaces.

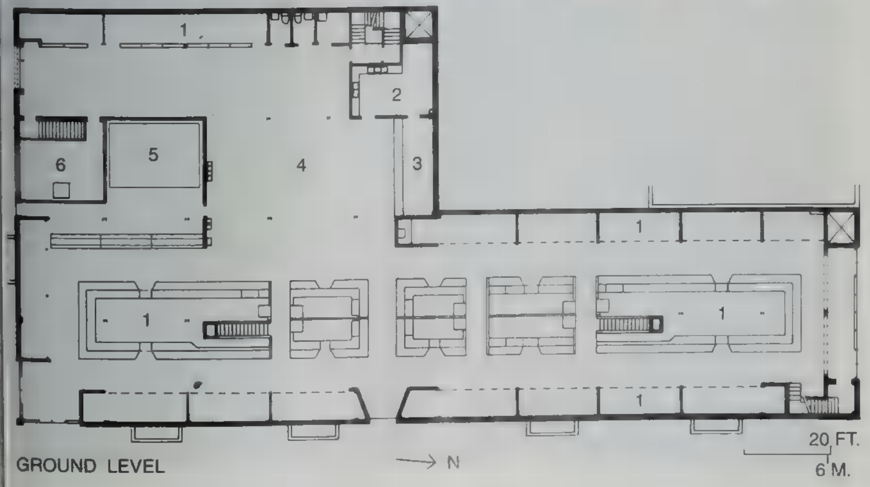
[illegible] credits [illegible] Godard of Studio Works for giving the [illegible] touch [illegible] graphics, including the good-humored [illegible] and the ceramic-tile mural on the exterior that [illegible] beneath the original stainless-steel sign. [illegible]



Pierce Yee Associates have united classroom buildings of varied characters within a single envelope that honors the campus's Gothic tradition. At the opposite end of the spectrum, the Architectural Resources Group has created one of the more unusual office parks in the U.S. by rescuing 11 modest Victorian houses in San Francisco from the path of an expressway and uniting them into a "village" of spaces for non-profit organizations. All of these projects do share one common factor. Each makes use of existing buildings that might well have been demolished in a less thoughtful and conservation-minded era.

C. K. H.





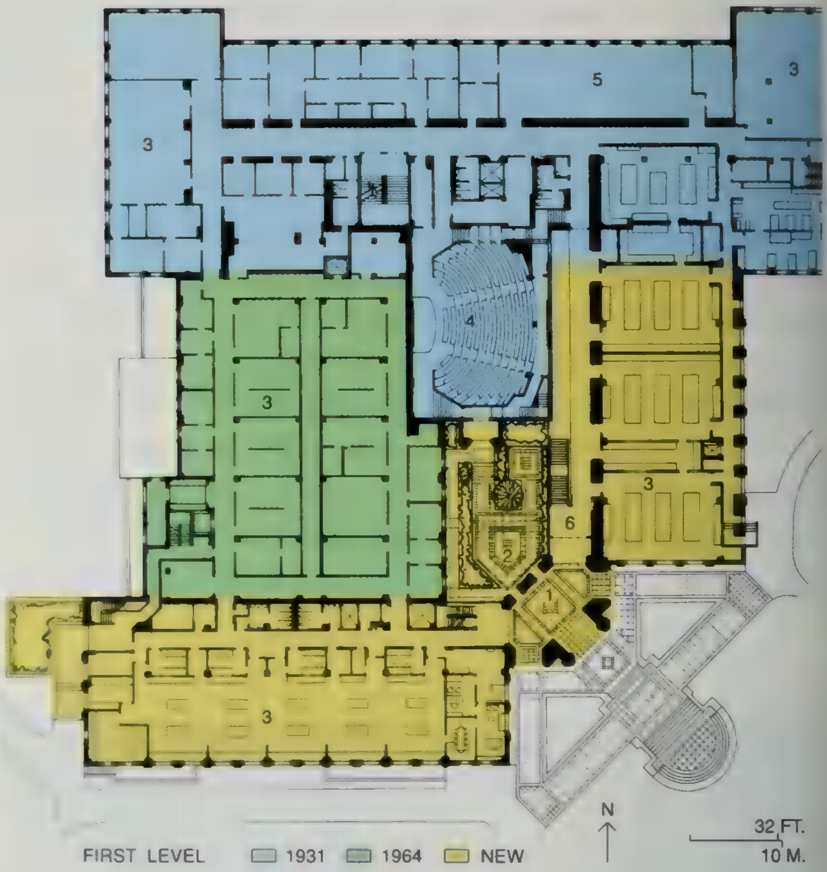
1. *Sales stalls*
2. *Kitchen*
3. *Serving counter*
4. *Dining tables*
5. *Walk-in cooler*
6. *Refuse*

Chemistry Building

Indiana University, Bloomington, Indiana
Harley Ellington Pierce Yee Associates, Architect

New wings enhance Gothic identity

Faced with a Collegiate Gothic building from the 1930s that had been unsympathetically expanded in 1964, architects Harley Ellington Pierce Yee Associates (HEPY) used the latest addition to the complex as a way of tying all the pieces together. By wrapping two new wings of 85,000 square feet around the 1964 annex and employing the same Gothic vocabulary as the original building, the architects created a single personality for the entire facility. A new entrance tower on the rear of the building orients the complex to an emerging science campus and also serves as an air-intake shaft for laboratories (opposite left). The tower leads to a courtyard that brings sunlight into the center of the building and provides access to the largest of three auditoria. The 1931 building required little exterior renovation (just some window replacement and pointing of its limestone facade), but it was mostly gutted on the inside, says Gary Skog, a HEPY principal. While the basic circulation plan was kept, old ductwork was replaced and new electrical and hvac systems were installed. Because technology has changed so much, most labs were moved out of the 1931 building and into the two new wings. Labs in the 1964 building were kept, but upgraded with new electrical and venting systems. A long narrow atrium (opposite right) ties one new wing to the original building, combining new materials with old ones. *Clifford A. Pearson*



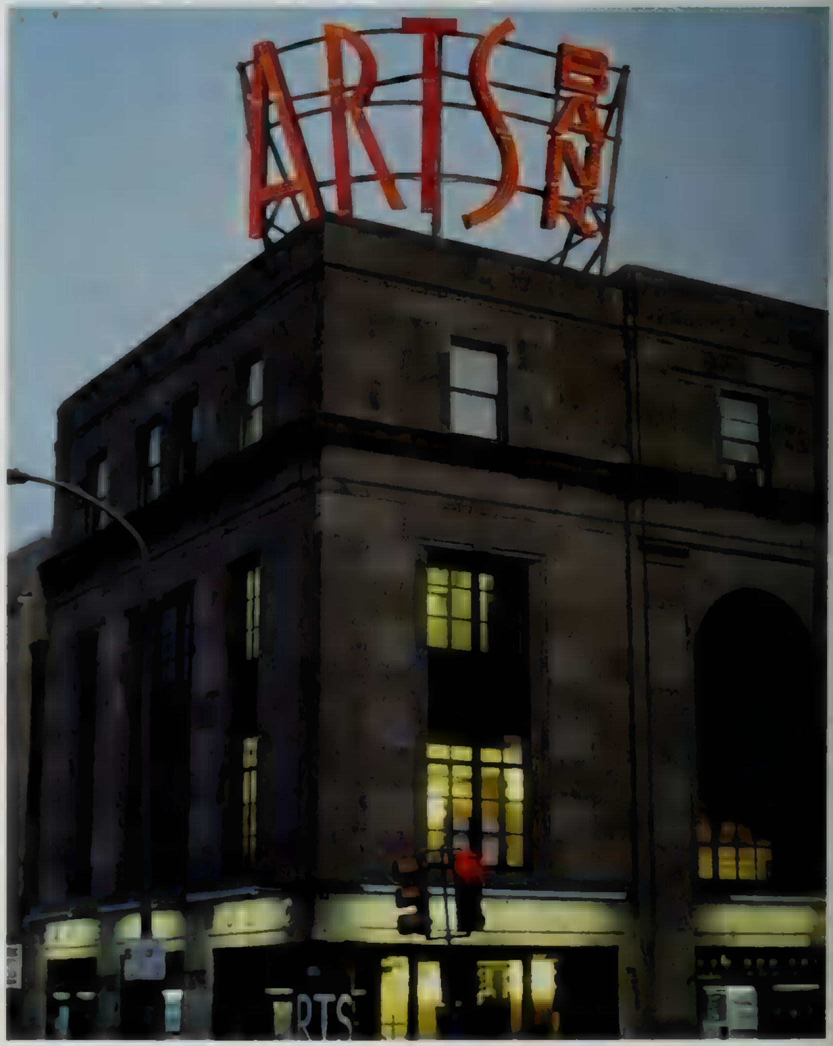
1. *Entry tower*
2. *Courtyard*
3. *Laboratory*
4. *Auditorium*
5. *Administration*
6. *Atrium*

Philadelphia Arts Bank

Philadelphia
Mitchell Kurtz Architect

Theater and studio deposited in former bank

Completed just over a year ago, the Philadelphia Arts Bank is a nonprofit rental theater and rehearsal studio located, as the new institution's name implies, in a former bank designed in 1927 by Ralph Benke, principal architect of the automat chain, Horn and Hardart. Renovated by New York City-based Mitchell Kurtz, Arts Bank is the first theater to open on the city's Avenue of the Arts, a cultural corridor that also includes facilities for the Philadelphia Orchestra (by Venturi, Scott Brown & Associates), Wilma Theater (by Hardy Holzman Pfeiffer & Associates), and the Freedom Theatre (also by Kurtz). Exterior changes were minimal: Kurtz added a new corner entrance in the place of an old pizzeria, which he marked with a porcelain-coated metal column. A neon sign with 12-foot-high letters now crowns the roof, drawing attention to the structure along Broad Street, a busy thoroughfare. Inside, the 238-seat theater occupies the [illegible] banking hall on the second floor (photos opposite). Kurtz [illegible] to accommodate the orchestra pit and a depr[illegible] area. One of the many fragments of the bank that [illegible] is [illegible] wall, which now is the green room. "We [illegible] radica[illegible]" explains Kurtz, using the meta[illegible] tablet reused several times after earli[illegible] been [illegible] the name [of the new institution] implie[illegible] of [illegible] uses." *Karen D. Stein*



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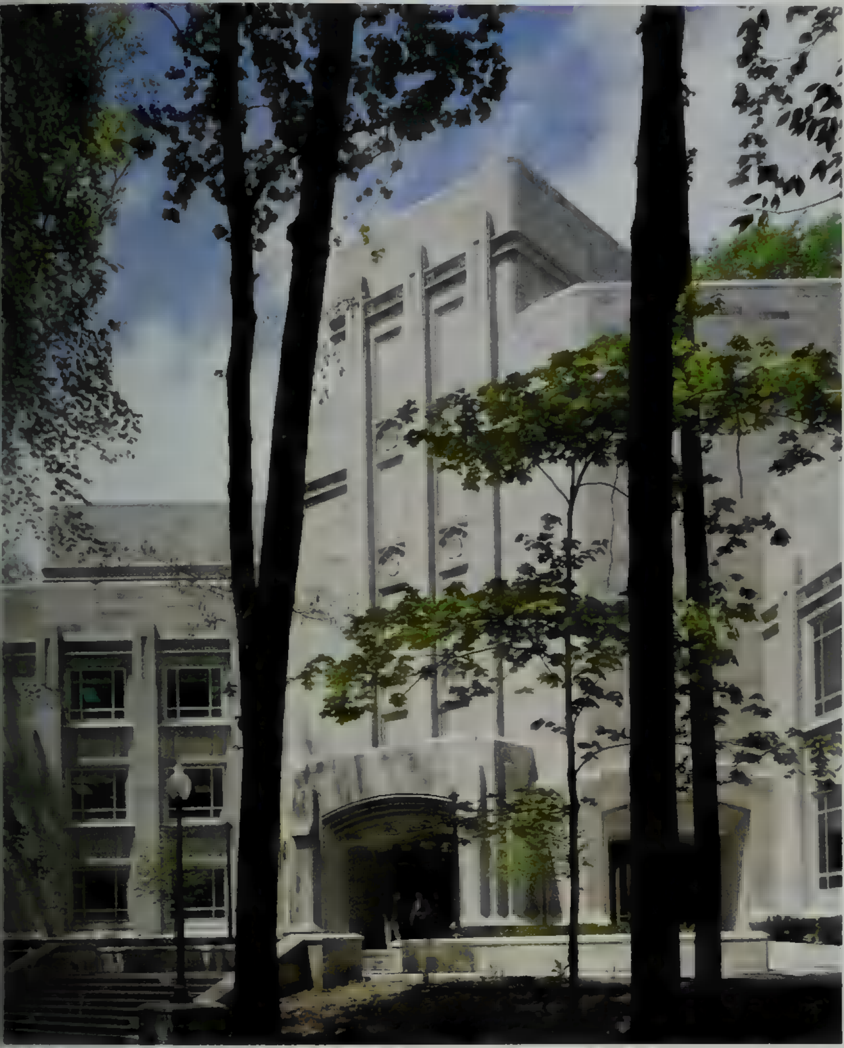
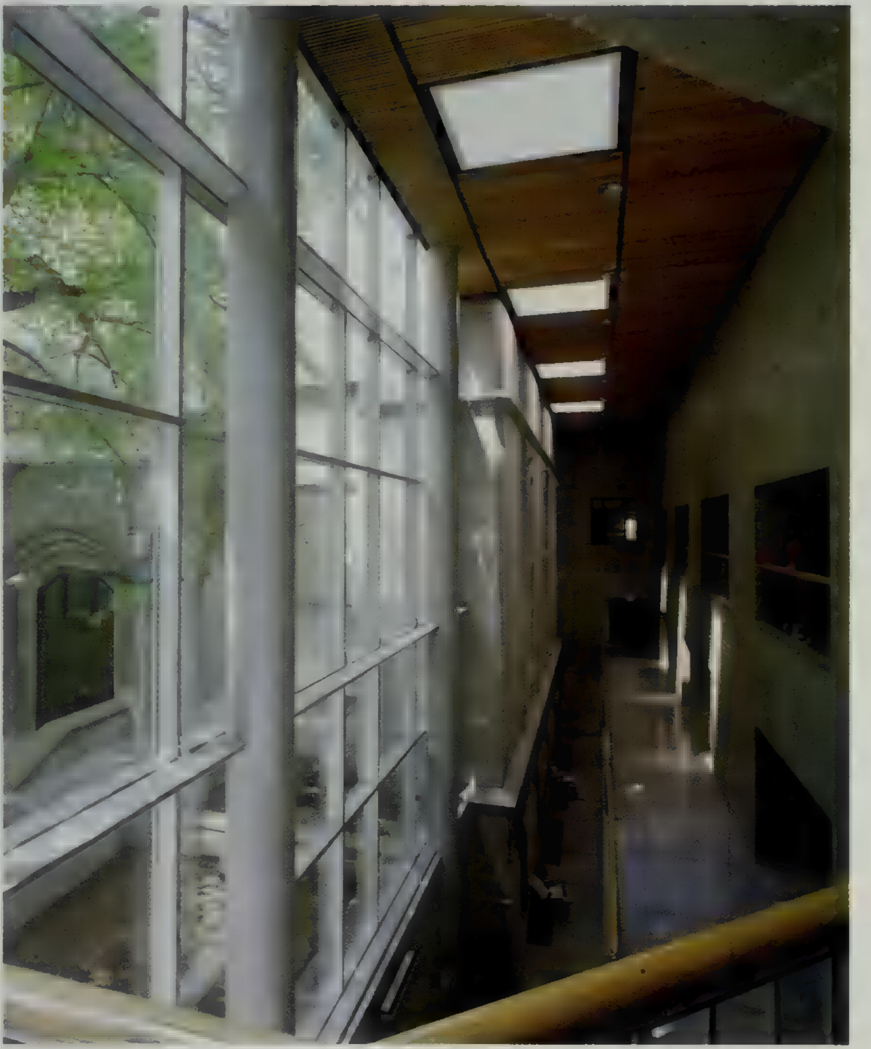
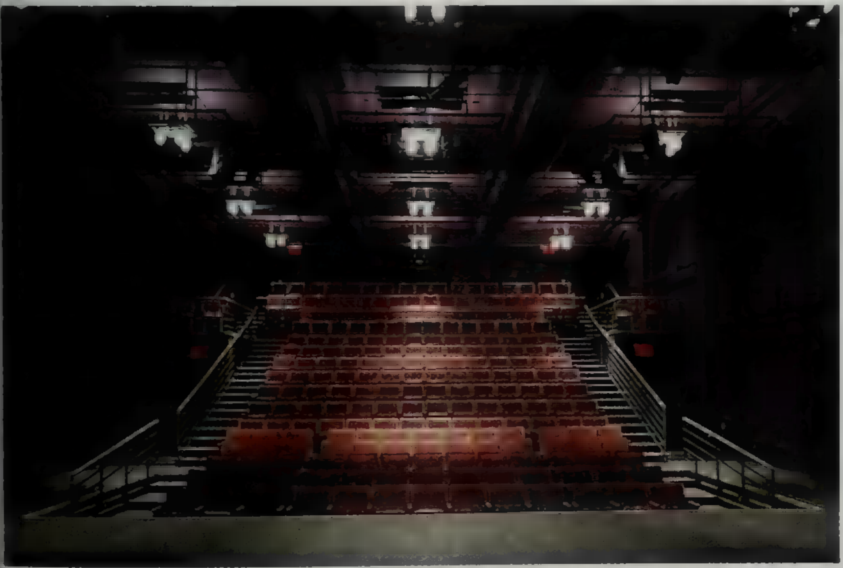
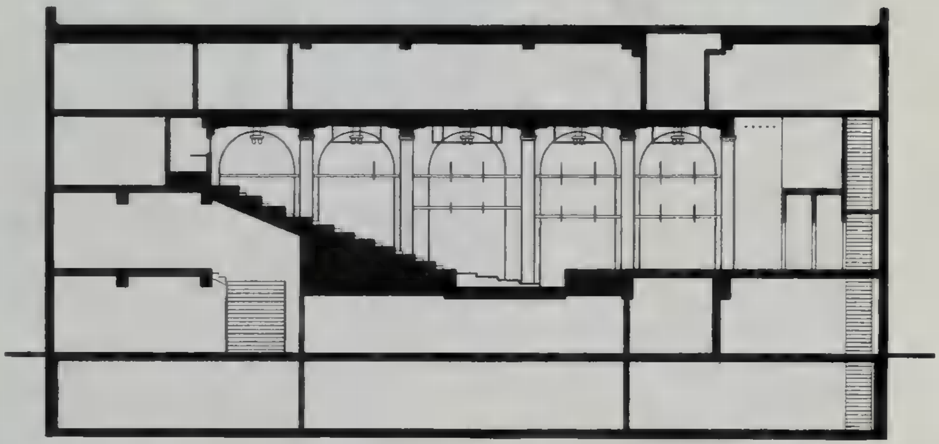
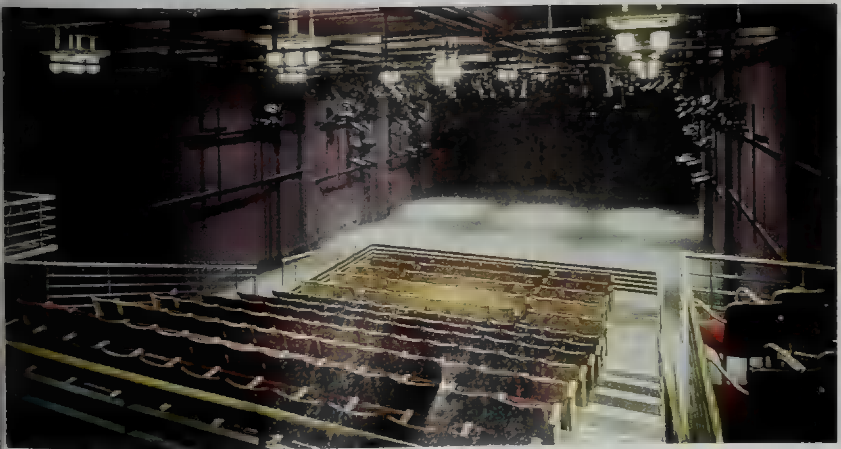
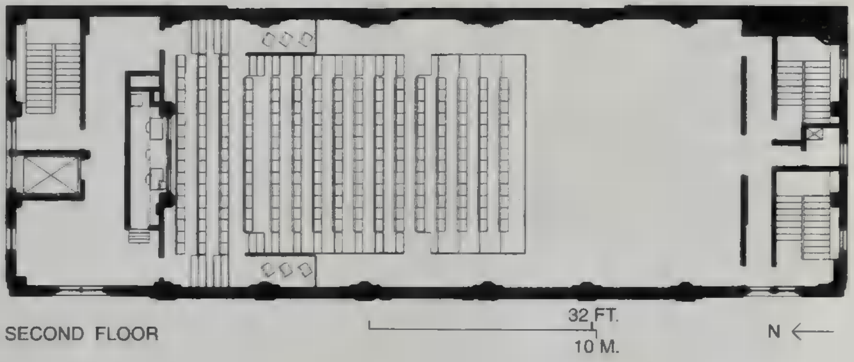












SECOND FLOOR

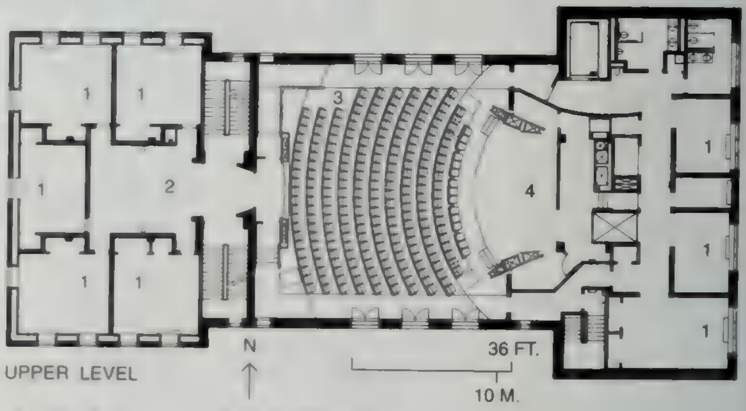
Rock Hall, Temple University

Philadelphia, Pennsylvania
Kieran, Timberlake & Harris, Architect

The interior restoration and renovation of a 1914 Neoclassical building required architect Kieran, Timberlake & Harris to work within the constraints of the existing building envelope by designing a series of limited, insertions and minimal removals for each required space. Preserved were the plaster groin-vaulted entrance hall, with its mosaic marble floors, pilastered walls, and ceiling. A new music library was created to the right of the hall, with beamed ceiling, round-head windows, and restored pendant-mounted fixtures. Studios were also inserted on the entrance level, including an audition room in which wood and metal panels were "fractured" and folded below the ceiling, making it an "instrument" to diffuse sound.

The basic configuration of the new recital hall on the second floor was essentially maintained; a sloped floor and fixed seats were added, and a new proscenium opening was inserted into the east wall. The existing deeply coffered ceiling was restored, with grilles and lighting placed discrete within the coffers. In order to preserve the existing arched windows, to keep natural light, and satisfy acoustical requirements, shutters were put in place for use as each performance required. On stage, a new proscenium frame of maple and mahogany panels was woven into a solid and void pattern so sound can reflect off the surfaces, increasing resonance in the hall. *Carolyn D.Koenig*

© Barry Halkin photos



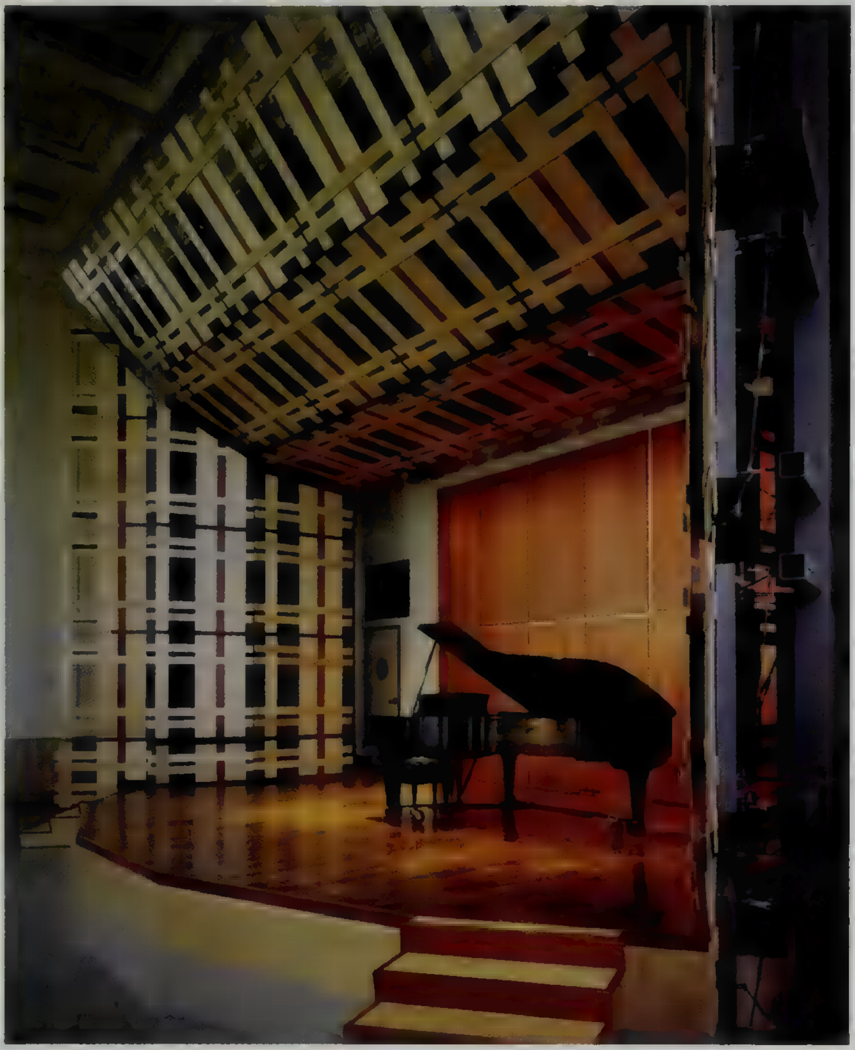
1. Studios
2. Lobby
3. Auditorium
4. Stage

Preservation Park

Oakland, California
Architectural Resources Group, Architect

Nestled in the heart of downtown Oakland, California, one block from the new Federal Towers and terminating the Center Walk pedestrian way, a small Victorian neighborhood has been resurrected, capturing a piece of the city's architectural history and contributing to revitalization of the urban core. Preservation Park, a grouping of 16 mid-19th-century Victorian homes, has become the city's newest business park. Envisioned as a catalyst for community pride and as a think-tank for non-profit organizations with environmental and cultural goals, the park now has 43 businesses, a cafe, meeting and conference facilities, and outdoor public concerts throughout the year.

As land was cleared for freeway construction in the early 1970s, 11 Victorian homes were removed (top right photo) and sited adjacent to five existing homes of National Trust historic status. A private developer began restoration. In 1986 the City of Oakland repossessed the partially-built project and teamed up with Toronto-based developer [illegible], which donated much of the project-management, marketing, and leasing services needed to complete the project. Architectural Resources Group of San Francisco was responsible for restoration of the building exteriors and renovation of the interiors. Devel[illegible] profit [illegible] monetary donations and discounted materials [illegible] the $11 million actual cost of the project, which is currently operating in the black. *Pam Kinzie*



David Wakely photo

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That might have been how CUH2A architect Fred Bliefernich described the November 1993 assignment from Six Flags® Great Adventure.® The project at the New Jersey theme park called for a single structure designed to look like a series of shops on a colonial "Main Street" that featured the well-known cartoon characters. The deadline was five months away. And most of the construction would take place during winter.

The Sweet's Catalog Files, with their depth and breadth of product alternatives, quickly became Fred's primary reference tool for design concepts, materials, and manufacturer contacts.

"If a manufacturer wasn't in Sweet's, it wasn't considered for this project," says Fred, an associate and senior project architect at the top-20 A/E firm headquartered in Princeton, New Jersey. "The Real Brick™ catalog in Sweet's provided enough detail for us to specify from U.S. Brick Systems,® which was ideal for cold weather installation." And a call to Sweet's Buyline® service put Fred in touch with regional sales representative [illegible], who quickly sent samples and assured product availability.

[illegible] of [illegible] winter in years, the park opened [illegible] on April 1. And with help from Sweet's, the project that had seemed a little looney now had everyone whistling a different tune.

For Fred and other architects, the Sweet's Catalog Files and SweetSource®, complementary electronic product information on CD, are essential. "With manufacturers' binders often being two to three years old, you need to go to the most up-to-date, comprehensive source of information," he says, "and that's Sweet's."

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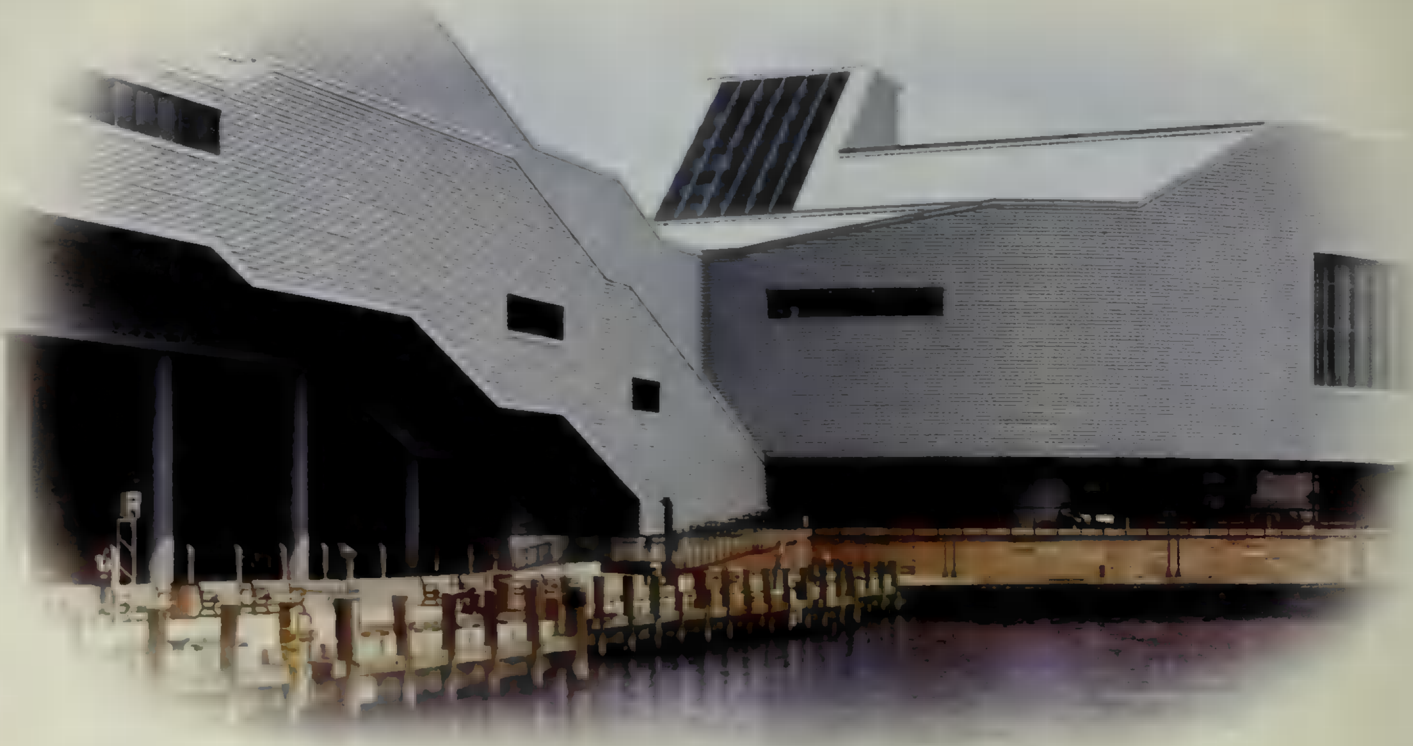

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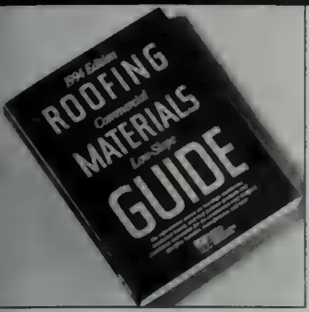
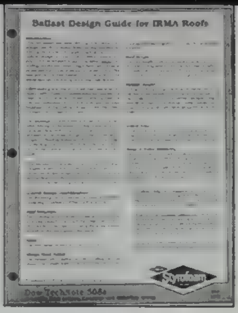
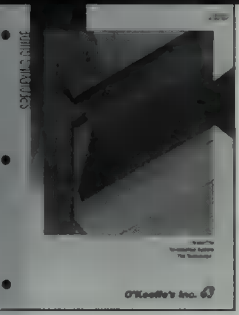


400. Roofing-materials guide
A must for any firm doing roof lesign, a low-slope guide describes nundreds of commercial, industrial, and institutional roof materials—ouilt-up, modified-bitumen, single-ply membranes, metal roof panels, and coatings—plus insulations and fasteners. Order form summarizes data in each section. National Roofing Contractors Association, Rosemont, Ill. *



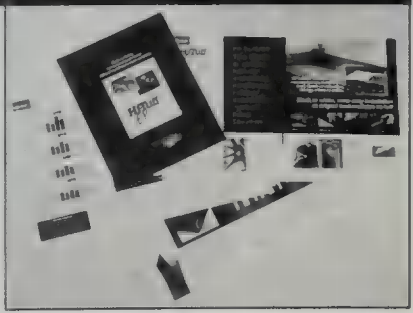
401. Stone and paver ballasts
A 10-page TechNote lists design, traffic, wind-load, and other factors to consider when selecting the appropriate stone or paver ballast for a protected-membrane (IRMA) roof. Charts, graphs, and a U.S. wind-speed map illustrate which ballast suits a specific roof, with respect to structure, slope, and height. Dow Chemical Co., Midland, Mich.



402. Water-termination bars
An architect's guide explains why a iew reglet, made of Noryl thermoplastic, allows more roof-design lexibility while maintaining its esilient performance much longer han metal systems. Available in ustom colors, the reglet has a removable EPDM gasket; five styles suit any wall or roof assembly. 800/227-305. O'Keeffe's Inc., San Francisco.

403. Roof-product line on disk
V.I.P. software accesses data on all Versico elastomeric roofing products—specifications, details, tech sheets, approved insulations, fastener layouts—on a single, easy-to-install disk. Generic specs can be exported. Requires DOS Windows 3.1; 2MB. Free by letterhead request. 800/992-7663. Versico Incorporated, Sub. Carlisle Corp., Akron, Ohio.

04. Standing-seam roof system
MBCI's eight-page Sweet's catalog ighlights snap-together and field-eamed Galvalume roofing systems. ested to UL fire-resistance and UL 0 wind-uplift requirements, as well s water-penetration and air-infiltraon levels of ASTM E283 and E331. Vide range of finish options includes eep architectural colors; good for reoofing. MBCI, Houston.



405. Heat-weld white EPDM
An eight-page brochure describes a new line, Hi-Tuff/EP, a hot-air-weldable reinforced-rubber singly-ply, available in white as well as black. Text and details cover weathering performance, correct installation and termination techniques, and life-cycle cost comparisons. JPS Elastomerics Corp., Northampton, Mass. *

Continued on page 113

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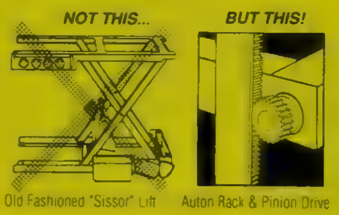

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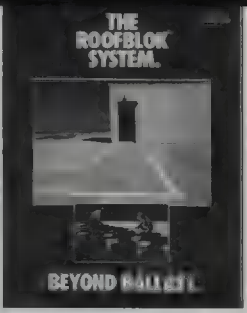
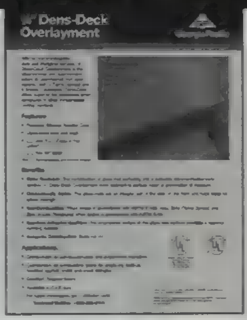


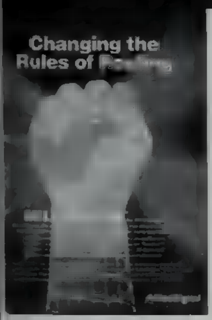
06. Galvalume performance
n eight-page technical brochure ows old (circa 1973), middle-aged, d new roofs and test panels that emonstrate the long-term durability bare-metal Galvalume, sheet steel ated with a corrosion-resistant aluinum-zinc alloy. A design guide ustrates the metal roof's appearce and structural benefits. Bethhem Steel Corp., Bethlehem, Pa.

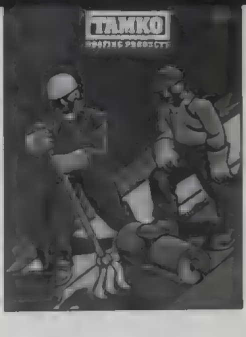
407. Ballasting pavers
A Roofblok catalog explains how the interlocking concrete-ballast paver works, and details FM systems for a range of calculated rooftop wind speeds up to 200 mph. For use with single-ply systems, the paver does not shift or scour like stone ballast, and protects the membrane from vandalism, hail, UV, and traffic damage. Roofblok Ltd., Fitchburg, Mass.



08. Tile-roof installation tips
n application manual and installan video explain Ceramic Slate, a ed-clay interlocking roofing shingle rmed to look like a thick slate. eighing 580 lbs per square, the roof s a 60 year warranty and comes in e colors. Covers design paramers, flashing, underlayments, hips d ridges, etc. 800/CEL-SLATE. eladon, New Lexington, Ohio.

409. UL-listed overlayment
Technical bulletin describes the fire- and moisture-resistive properties of 1/4-in.-thick Dens-Deck, UL listed Class A as an overlayment for combustible decks or insulations under single-ply, built-up, modified-bitumen, metal, and wood-shingle roofing systems. Comes in 4- by 8-ft sheets that resist handling and traffic damage. Georgia-Pacific Corp., Atlanta.





10. Reformulated coal tar
ochure introduces Millennium, a lymer-modified product said to ild onto coal tar's superior waterofing characteristics an enhanced el of materials compatibility, fire sistance, and application flexibility. pplied in rolls and other systems, illennium has no slope restrictions: ad level to vertical. 800/221-6490. liedSignal, Inc., Morristown, N.J. *

411. Bituminous roofing guide
A 1995 brochure highlights the design, performance, and appearance characteristics of SBS-modified materials, both polyester- and fiberglass-reinforced, as well as built-up systems. Excellent application chart matches individual product with desired applications, installation methods, and certifications. 800/641-4691. TAMKO, Joplin, Mo. * ■

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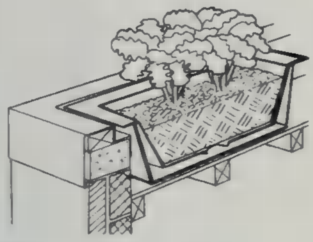

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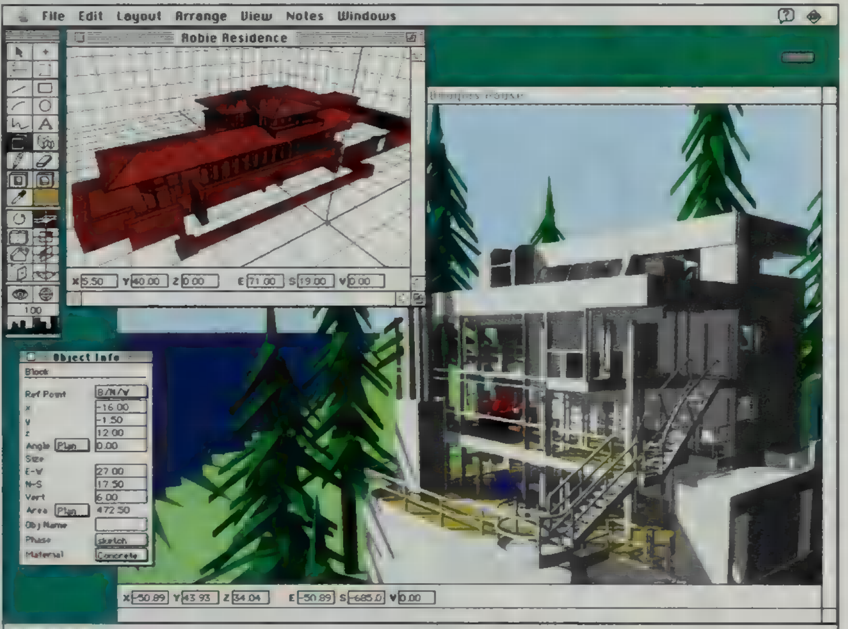

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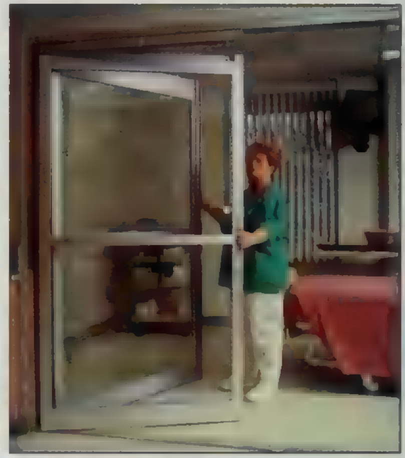

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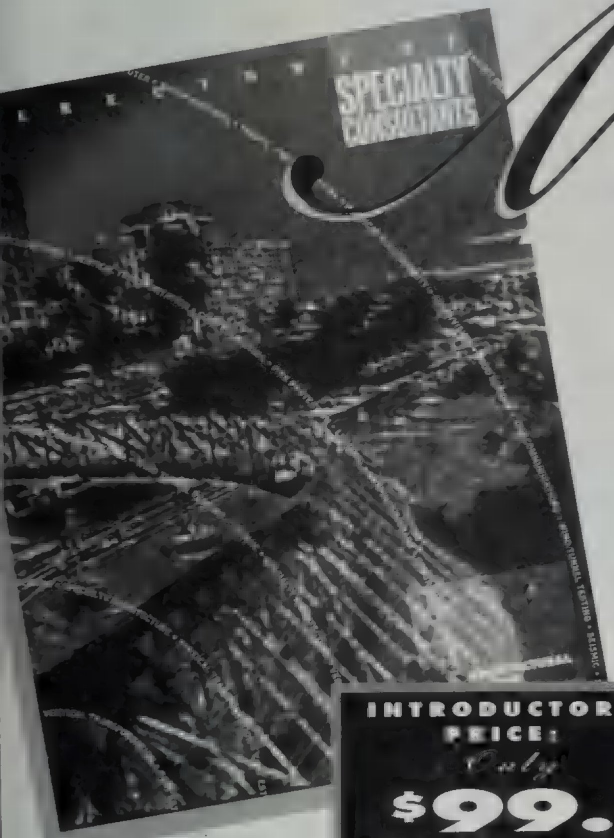

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Software...*continued from page 41*

which are Adobe Photoshop 2.5 or later, Aldus PhotoStyler 2.0, Fractal Design Painter 2.0 or later, Fauve Matisse, Corel Photopaint (in CorelDRAW 5.0 or later), Altamira Composer, Micrografx Picture Publisher 4.0 or later. There are 33 special effects in this package, including a tone-gradient designer, gradients on paths, fractal patterns (more on that below), textures, lens effects (globes, pincushions, and so forth), and page curls.

Manual: Terrific, highly readable (even funny) spiral-bound 106-page guide.
Ease of use: Good; the effects are generally quite fast. Ease of installation varies, depending on the software it is being plugged into. We reviewed it inside Micrografx Picture Publisher 5.0 and Adobe Photoshop.
Error-trapping: You can undo effects only if you have Undo available and enabled in the package Kai's is plugged into.
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Images Incorporated 4.0

Vendor: Iterated Systems, 5550-A Peachtree Parkway, Suite 650, Norcross, GA 30092. 404/840-0310, fax 404/840-0806.
Price: $149.
Equipment required: Computer that can run Windows 3.1 or later (386SX or faster CPU). Installation takes 3 MB of disk space. SVGA card is strongly recommended. If you use a standard 16-color, low-resolution card, color changes forced by the software may make the on-screen menus and dialog boxes hard to read.)

What happens when you turn a pixel image into a mathematical description of a pixel image? That's what fractal imaging is all about. Your image takes up less space on disk—typically a tenth to a hundredth of original size. You can increase the apparent resolution as well, adding new pixels between old ones—pixels that are defined as to what they probably should look like, by the pixels around them. (That's the secret behind inexpensive "800 dpi" or "1200 dpi" scanners; most of the resolution gain beyond 400 dpi is a mathematical software trick.)

The technology is showing up in many games, CD-ROM encyclopedias, and so forth (Iterated Systems sells developer kits for DOS, Windows, and Macintosh).

Images Incorporated is an inexpensive package that accepts the standard pixel-based file formats: BMP, RAS, TGA, and TIFF (all to 24-bit color, 16.7 million hues). GIF and PCX are only supported for 8-bit color (256 colors). The starting image can be no larger than 800 by 576 pixels.

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Manual: Spiral-bound, 86 pages.
Ease of use: Good with high-resolution SVGA, or 640 by 480 pixels with 256 colors instead of the standard 16. There's a "batch mode" that allows you to process many images at a time, overnight, or during lunch.
Error-trapping: Good. The compressed file is saved in the package's own format (FIF or FTT) so it will not overwrite the file you start with. But if you use the software to change resolution rather than for compression, you can overwrite the old file with the new one.
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New Congress *continued from page 29*

Construction is among the economy's most interest-rate-sensitive sectors. Already the runup in rates has dampened housing starts, which is usually echoed by the retail sector within a few months. If rates continue to bound upward, local-government borrowing—which finances schools construction and public works—will be affected.

However, CATO's Moore figures a more favorable tax picture will provide a needed economic shot in the arm. "We estimate that $1.5 trillion in assets have been locked-up [by tax-code changes passed in 1986]. If Congress changes the capital-gains rules, there should be an immediate unlocking effect, encouraging investment in buildings as well as other vehicles." Investment tax credits, passed in the early days of the Reagan Administration, offered generous protection to real-estate investors in the 1980s, helping to spur the huge overbuilding in commercial construction—and the subsequent market collapse. (In 1986, Congress repealed them.) Dean Schwanke, a researcher at The Urban Land Institute, a real-estate research and education organization, reports some concern that too much capital available too rapidly could lead to a repeat of 1980s overbuilding in a number of markets, upsetting the fragile real-estate recovery.

Regulations under the microscope

The Republican Contract calls for greater flexibility in the interpretation of regulations, and would block passage of rules whose costs exceed their benefits. Both Representatives Jan Meyers (Kan.), chairwoman of the Small Business Committee, and Thomas Bliley (Va.), chairman of the Commerce Committee, are looking to prevent what some consider onerous legislation. Environmental rules are sure to get a closer look under this measure. Many in the new Congress would like to see compensation for any rules that reduce the value of private property—a significant broadening of the Fifth Amendment's "takings" clause, that could have profound effect on the regulatory environment in which architects work [RECORD, October 1994, pages 50-53].

At one point, Gingrich mentioned the Americans with Disabilities Act in the possible category of too little benefit for too much cost, but industry experts report it will likely not be altered. "Provisions of the ADA would be too hard to appeal, change, or overturn," said architect Kim Beasley, with Paradigm, a Washington, D.C., firm that helps owners and designers with disabled compliance, "but there could still be flexibility in interpreting the intent of the law."

The American Consulting Engineers Council, which shares many government concerns with architects, has urged its members to "storm the capital" to urge liability reform (supported by many in the new Congress), retention of quality-based selection, and infrastructure investment. The AIA has mounted no similar effort, satisfied, says CEO Terrence M. McDermott, that "many [lawmakers] are familiar with and have lent their support to various programs and policies of interest to architects." Though quick consensus on the Contract is likely in the House, Republicans do not hold the necessary 60 seats in the Senate to prevent lengthy delays and inaction caused by potential Democratic filibustering. In addition, the President can veto legislation Congress sends him. As NRG's Brazeman says, "In Washington, it's never over until it's over." ■

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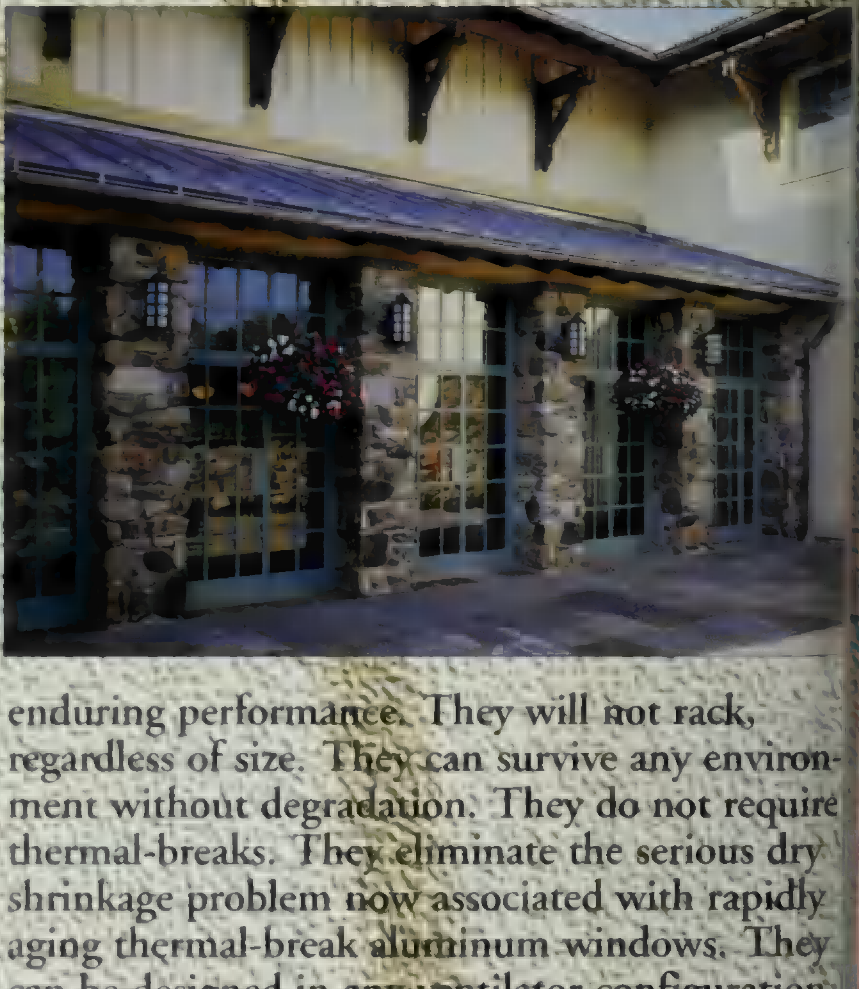

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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD *has asked the architects to identify the products specified.*

Pages 68-73
Focus: HOPE Center for Advanced Technologies
Smith, Hynchman & Grylls Associates, Inc., Architect
Entrances and sliders: Besam, Inc. Panic bars: Von Duprin. Ceilings: USG Interiors; Hunter Douglas Architectural Products. Special coatings: Triarch Industries (Duroplex). Paints: Sherwin-Williams; Glidden. Embossed stainless-steel panels: Baker. Rubber flooring: Freudenberg (Nora). Column covers: Pirelli. Office furniture: Steelcase, Inc. Incandescent fixtures: BEGA. Fluorescents: Zumtobel. HID lighting: Holophane. Elevators; custom-enclosure escalator: Otis.

Pages 82-85
Dance Theater of Harlem, New York City
Hardy Holzman Pfeiffer Associates, Architect
Exterior brick: Ram Building Products (Bartex). Glazed masonry units: Trenwyth Industries. Insulating light-transmitting panels: Kalwall Corp. Aluminum windows: TRACO. Slate-pattern shingles: Eternit. Locksets: Schlage Lock Co. Acoustic ceiling panels (studio): Tectum, Inc. Glazed interior partitions: Raco. Special wall coating: Triarch Industries (Duroplex). Paints: Benjamin Moore Terrazzo-tile flooring: PermaGrain Products, Inc. (Armstone). Fluorescent lighting: National Lighting Co. (custom perforated-metal enclosures). Prismatic-reflector fixtures: Beta Lighting. Downlighting: Lightolier, Inc.; Zumtobel. Elevators: Dover.

Pages 86-91
Library and Technology Center, Baruch College
Davis, Brody & Associates, Architect
Brick and terra-cotta renewal: Restoration Concepts. Wood windows: J. Zeluck, Inc. Atrium skylight: Fisher Skylights. Entrances: Dawson Door Co. Revolving doors: Crane Fulview. Wood doors: Weyerhauser Co. Paints: Benjamin Moore. Curved stair: Zephyr. Stainless-steel fabrications: I.D.A. Linoleum: Forbo (Marmoleum). Acoustical ceiling and suspension grid: USG Interiors. Interior lighting: Edison Price; Elliptipar (atrium); Lam; Winona Lighting (lobby). Exterior: BEGA; Rambusch Co. Furnishings: Knoll International (Pensi Collection seating; Brno and Wassily chairs; Pfister lounge; Platner table). Elevators: Dover. Cement terrazzo: Magnan.

Pages 92-93
Pocantico Conference Center
Herbert S. Newman & Partner PC, Architect
Entrances: Ellison Door Co. Glazing: PPG Industries. Paints: Benjamin Moore. Reception desk, tables, and seating: Thos. Moser. Leather seating (lecture hall): Matteo Grassi. Suspended metal ceiling: Avpro.

Pages 94-97
Admission Center, Brandeis University
Mark Simon with Mahad Saniee of Centerbrook Architects
Aluminum and glass entrance: LEED/Himmel Industries, Inc. Paints: Benjamin Moore (eggshell); PPG (flat). Reception and conference furnishings: custom design by Centerbrook Architects. Fluorescent lighting: ICE; Halo; Lithonia. Exterior fixtures: Kim Lighting.

Pages 98-101
Ustate/U.S. Robotics
Valerio Dewalt Train Associates, Architect
Entrances: Tempglass. Custom woodwork and casework: Barsanti Woodwork Corp. Stencils: Miller-Wagenaar Studio. Resilient flooring: Forbo. VCT: Armstrong World Industries. Custom balustrade and railings: P.I.W. Corp. Corridor carpet: Shaw Industries.

Corrections
- Bercat Construction should have received credit as construction manager for the Chiat/Day offices in New York City [RECORD, Sept. 1994].
- The photo of Danadjieva & Koenig Associates' design "Future Park" [page 12, Nov. 1994 RECORD] should have been credited to Peter Xiques.
- Though undoubtedly good looking from any angle, the Simpson doors featured in February's New Product coverage, page 41, appeared upside down.

Announcing a CSI Exclusive—

The Construction Contract Administration Module

"Finally documentation that promotes harmony and the win/win attitude needed to produce a successful project. The new CCA module presents the basic responsibilities of the owner, A/E, and contractor in the construction contract administration process."

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Director of Specifications
RTKL Associates Inc., Baltimore, MD

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Robert M. Seipold, CDT, CSI
[illegible]
[illegible] Inc. Omaha, NE

CSI's *Manual of Practice* (MOP) has long been acknowledged as the industry's most comprehensive guide to construction documentation. Now with its new Construction Contract Administration Module, the MOP has no equal.

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AWAPLAN

© [illegible] TAMKO ROOFING PRODUCTS, INC.

CREATED TO DEFY THE POWERS OF NATURE.

Once in a great while, a new product is created that makes its predecessors obsolete. In the world of roofing that product is Awaplan–America's first SBS-modified polyester roll roofing.

Crafted to withstand the perils of heavy roof traffic and building movement, it continues to be [illegible] standard [illegible] roll roofing, displaying extraordinary elasticity, tensile strength, tear strength, [illegible] puncture resistance.

[illegible] the elements with the legendary strength of Awaplan. [illegible] ext. 284 for more information.

TAMKO
ROOFING PRODUCTS

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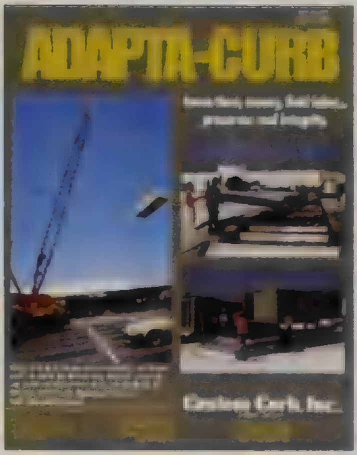
Unique System for Retrofit Solutions

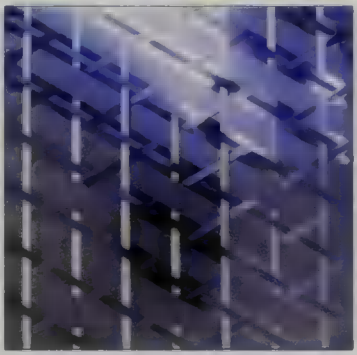


Informative color brochure illustrates the many configurations and options available with Custom Curb Adapta-Curb System that allows equipment changes without disturbing the roof. The unique system is designed for retrofit as well as new construction to add or replace HVAC units, vents, plumbing stacks, skylights and other rooftop equipment. Exclusive sloped design for positive water run-off and proper load distribution.
1-800-251-3001.

Custom Curb, Inc.

Circle 44 on Inquiry card

Sheet Metal Decoration

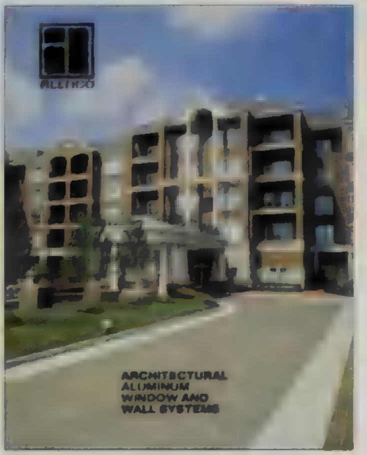


INTRODUCING THE NEW ALPHA COLLECTION FOR 1995. With 24 patterns to choose from, ranging from the most basic vandal resistant **TEXTURES**, to innovative **STANDARDS** and our new **ULTRA Series** (photo). Patterns come in standard sheet sizes with border-to-border decorations, using distinctive finishes on a variety of metal surfaces for elevator doors and interiors, wall panels, column covers and trim. Starting at less than $10 per sq. ft. for Textures, the average price for stainless steel Standards is $12 to $15 per sq. ft.. Call 800-537-1127.

Surface Design + Technology

Circle 45 on Inquiry card

1994 Alenco Selection Guide



Alenco's 1994 product selection guide comes in a 4-color booklet full of information you can use immediately in planning that new construction or the renovation project. There are photographs & product details of various Alenco Commercial windows including single-hung, double-hung, horizontal sliders, projected, casement, & fixed. This booklet also contains sections on Alenco Commercial's installation accessories & replacement window systems as well as a 2-page spread sheet that answers 22 key design & engineering questions.
1-800-444-1444.

Alenco Commercial Div.

Circle 46 on Inquiry card

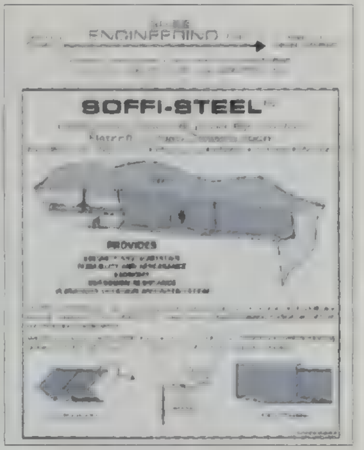
Accessibility Solution for Straight & Curved Stairways

CARRIER-LIFT® Inclined Platform Lifts from Access Industries, Inc. carry a wheelchair or seated passenger up straight and curved stairs providing access to two or more levels. Installation requires minimal, if any, building change. The self-contained power system uses standard 110 volt power. A power-fold platform system and up to 180° parking turns enable handy storage when not in use.

Access Industries, Inc.

Circle 47 on Inquiry card

Soffi-Steel Pipe Covering

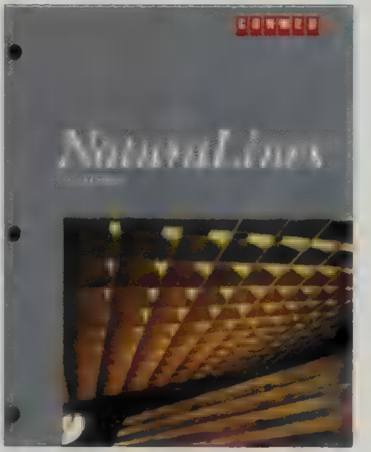


So rugged and tamper resistant that it is being specified for correctional facilities, the Soffi-Steel system is simple to install and offers a streamlined appearance unobtainable with some other systems. The Soffi-Steel system can accept recessed or concealed sprinklers as well as institutional sprinklers. Available in various colors or in stainless steel. For more information, contact Grice Engineering, Inc., 23 North Main St., Janesville, WI 53545; (800) 800-3213. Fax (608) 757-1488.

Grice Engineering, Inc.

Circle 48 on Inquiry card

Conwed Respond Ultimate I Panel



Conwed Respond Ultimate I is an acoustical wall and ceiling panel designed for use in areas requiring abuse resistance and acoustical absorption. It utilizes a glass fiber core faced with an acoustically transparent open perforated rigid vinyl sheet and wrapped with fabric or vinyl. Ideal for use in: gymnasiums, theatres, and multi-purpose rooms. Conwed, 1205 Worden Ave. E., Ladysmith, WI 54848, 800-932-2383, Fax: 800-833-4798.

Conwed

Circle 49 on Inquiry card

Manufacturers' Spotlight

Downlights

Capri Lighting introduces a broad offering of High Intensity Discharge downlights in the new H.I.D. Catalog. The offering includes three major groupings of downlights: the Commercial Series, Design/Build Products, and an economy Pacesetter Series. Lighting designers or builders have a choice of fixture options in three budget ranges, filling the needs of any type project.

Capri Lighting

Circle 52 on inquiry card

New "Architects Showcase™" Kit from CertainTeed

This full-color kit contains details on our Monogram™, Meridian® and Cedar Impressions® vinyl siding, soffits, and accessories. Includes a 3-1/2" diskette featuring a three-part specification that simplifies document preparation. Copy and paste the information you need from specifications in Windows®, DOS and ASCII text format.
Call **800-233-8990**.

CertainTeed Corp.

Circle 53 on inquiry card

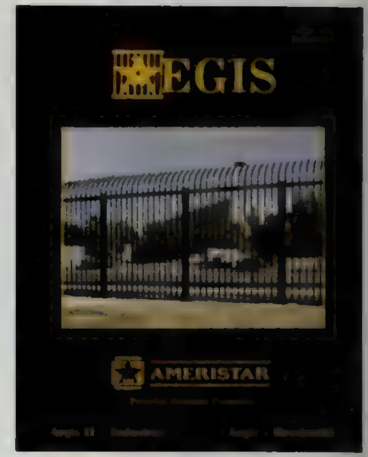
NRCA•CAD Construction Details Package

NRCA•CAD provides 126 construction details in isometric format and in section views. With compatible CADD software, you can select, view, modify, and print details to fit your project needs. The details can also be incorporated with other details to complete design drawings., NRCA•CAD is available in .DWG and .DXF formats.
Phone: 800/323-9545
Fax: 708/299-1183

National Roofing Contractors

Circle 54 on inquiry card

ÆGIS™



Aegis ornamental fence systems feature strong Forerunner™ rails, internal retaining rods, & specially designed panel brackets. Aegis II industrial ornamental fence offers the strongest security ornamental fence available in todays market. Aegis holds the distinction of having its fence systems specified by more architects & builders than any other in the market. Both industrial & residential brochures are available upon request & include data on structure, design, & options available. Panel design is a component system for easy shipping. For additional information & a free 8-page brochure, call (800) 321-8724 P.O. Box 581000, Tulsa, OK 74158-1000. Fax# (918) 835-0899

AMERISTAR®

Circle 55 on inquiry card

ROOFTOP HELIDECK
The Next Generation

The new Marine Aluminum pre-fabricated helicopter deck has several advantages over the older one. It is made from the same maintenance free alloy, but is even lighter and easier to assemble. No [illegible] is required [illegible] the pre[illegible] [illegible] can be [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] 005

G[illegible]og

Circle [illegible] card

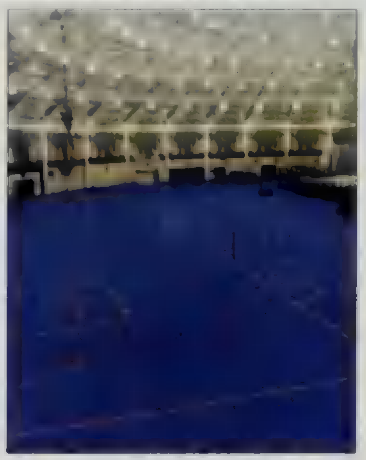
Thermal Insulated Slats

Atlas Door Corporation's Thermal insulated slat is pressure injected with environmentally safe, polyurethane foam that expands and cures to prevent gaps and voids. Two full steel skins (standard) provide a complete thermal barrier over the slat's surface with no metal-to-metal contact. Slats are available in aluminum, galvanized, prime, and stainless steel. R=6.25. **Call 800-959-9559**.

Atlas Door Corporation

Circle 57 on inquiry card

Elasti-Plus for All Seasons & Reasons

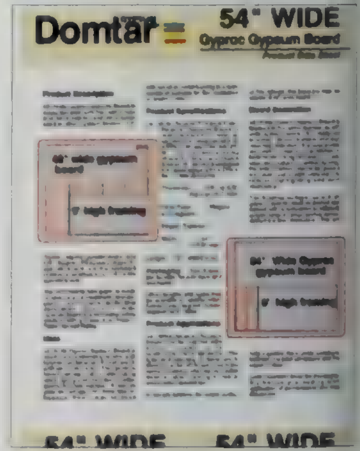


The renovation of the Notre Dame University's Athletic & Convocation Center flooring required a surface to meet the needs & expectations of many audiences: from trade shows to basketball throughout the year. The more than 52,000 sq. ft. facility, featuring a gymnasium & practice running track, is host to a wide variety of events. Initially, the challenge with selecting the flooring was five-fold. That is, the surface needed to have ease of maintenance, durability, functionality for sports, athletic qualities & be competitively priced. The Project Architect for the Center was Randy Pendut of Minneapolis based Ellerbe Becket. Pendut noted, "The range of activities to be performed throughout the year was tremendous. We worked with Connor•AGA & the University officials to ultimately specify Elasti-Plus. This system could structurally provide a resilient & soft surface for various sports & recreation... yet withstand the rigors of tradeshows, conferences, forklift traffic and banquets." For more information about the Elasti-Plus synthethic systems, call 800-833-1144.

Connor•AGA

Circle 58 on inquiry card

40 Words on Domtar Gypsum's 54" Gypsum Board



54" wide Gyproc gypsum board is now available for shipment with truck loads of standard gypsum products from all Domtar Gypsum US Plants, or in full direct ship truck loads. It is the perfect product for today's 9' high walls in new houses. It eliminates extra joints, labor and finishing to produce a better wall.

Domtar Gypsum

Circle 59 on inquiry card

Bicycle Lockers

CycLockers are all-steel modular bicycle storage cabinets that accommodate two bicycles per unit. Modules can be used individually or in linked groups sharing common walls. Choose from over 170 coating colors, two-toned color schemes, or stainless steel versions. For new brochure call 1-800/547-1940 ; request extension 530. Columbia Cascade Co. Portland, Oregon.

Columbia Cascade

Circle 60 on Inquiry card

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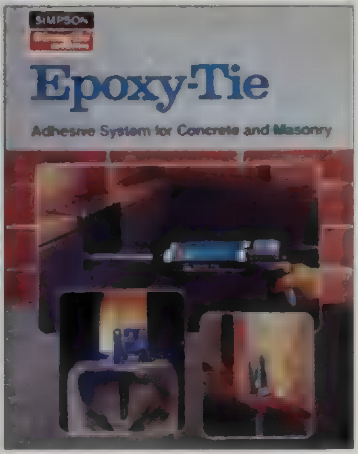
During the past 65 years, GameTime has been the leader in playground safety, design, durability and innovation. GameTime is committed to providing safe, accessible, environmentally friendly play equipment. 1995 will be our most comprehensive and exciting equipment offering. To learn more, call your GameTime representative at 1-800-235-2440

GameTime

Circle 61 on Inquiry card

Anchoring bolts easier with EPOXY-TIE ™



Low-cost epoxy system for retrofits in concrete or masonry provides stronger anchoring than can be achieved with mechanical anchors. Epoxy-Tie™ bonds with surrounding concrete; anchor is less prone to side-burst during close-interval installation. Higher resistance to moisture and vibration than mechanical anchors. Full information in brochure **F-ET**.

Simpson Strong-Tie® Co., Inc.

Circle 62 on Inquiry card

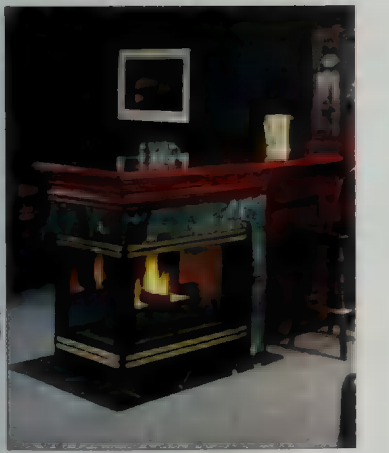
Concrete Waterproofing by Crystallization

Applied as a slurry coating, Xypex is a chemical treatment that waterproofs by penetrating the concrete with a crystalline formation that 'plugs' the pores of the structure preventing water seepage. Xypex is ideal for use on the 'inside' of wet underground structures.

Xypex Chemical Co.

Circle 63 on Inquiry card

HEAT-N-GLO Fireplace Products



Looking for quality fireplaces that combine efficiency and aesthetics? Call for our brochure on energy-saving built-in gas or woodburning fireplaces. Including see-thru, three and four sided glass fireplaces, inserts for pre-existing fireplaces or our direct-vent (no chimney) gas fireplace available with remote control. Call 612-890-8367

Heat-N-Glo

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Accessible Lavatory Insulation

A full color catalog will explain the different Handy-Shield safety covers offered for the new or retrofit projects that need to comply with the American Disabilities Act. The specific use, sample specifications, drawings and color choice are all summarized in this easy to understand catalog.

Plumberex

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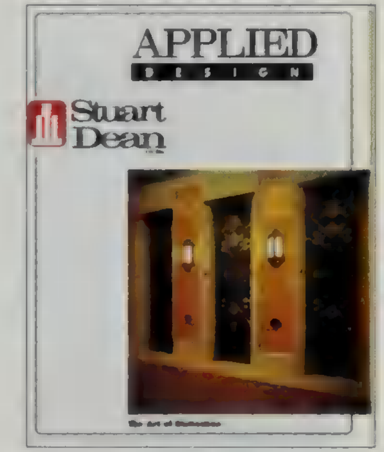
Decorative Grilles

Unusual visual effects emerge when our grilles are designed for area effects. Versatility is the theme. R&G offers architects and interior designers many ways to express the changing forms of metal with the integrity of R&G's architectural grilles. Custom or standard finishes are available plus any grille can be made in matching color to blend with your decor. 202 Norman Ave., Bklyn. NY 11222. 800-521-4895. Fax: 718-349-2611.

Register & Grille Mfg., Co.

Circle 66 on Inquiry card

Applied Design by Stuart Dean



When a new architectural design technique is impressive enough to be used by firms like Pei, Cobb, Freed & Partners and Frank Williams and Associates, at only half the price of etching, it catches everyone's attention. Stuart-Dean's Applied Design is a versatile method for decorating and refinishing elevator doors, metal, wood or glass. It can often be applied on site, overnight. You can choose stock patterns or custom artwork. 1-800-322-3180.

Stuart Dean

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Manufacturers' Spotlight

Level-Right® Self-Leveling Floor Underlayment

Level-Right® saves time and money in any floor leveling situation. Designed for thin-capping concrete - even over old floor goods, adhesive residue, and wood subfloors, usually with no shotblasting or scarifying required. Can be featheredged and achieves compressive strengths up to 5,500 psi - for large projects or small repairs. For free Specification Packet call 1-800-356-7887 or fax 612-478-2431.

Gyp-Crete Corporation

Circle [illegible] on Inquiry card

The Discrete Access & Egress Solution

Security requirements, space constraints and aesthetic considerations are a few of the problem-solving applications for the JOMY Safety Ladder. The ladder's discrete appearance makes it an ideal solution for access and egress requirements. The ladder looks like a drainpipe when closed, but opens to a heavy-duty ladder with slip-resistant rungs and a safety rail. Jomy Safety Ladder Co., 1728 18th St., Ste 201, Boulder, CO 80302. Phone 800-255-2591.

Jomy Safety Ladder

Circle 69 [illegible] Inquiry card

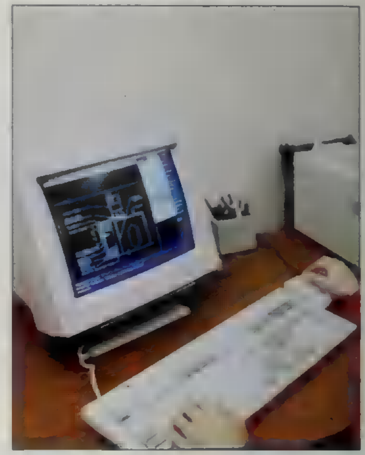
Fence Systems

This new aesthetically appealing Euro-design fence system combines see-thru good looks with strength and durability of 6-gauge galvanized steel mesh. Powder-coated in a large variety of colors to suit any design and enhance the appearance and security of any property it surrounds, this fence system is virtually unclimbable, rugged, maintenance-free and easy to install. OMEGA FENCE SYSTEMS, Laval, Quebec. 1-800-836-6342.

Omega Fence Systems

Circle 70 on Inquiry card

SENERGY CAD-NET SOFTWARE



Architects can cut hours to minutes when designing exterior walls with Senergy's CAD-NET, a new AutoCAD - compatible (V.11 and higher) specification & detail drawing program for Exterior insulation & Finish Systems (EIFS). The CAD-NET program provides specifications & details for Senergy's Senerflex, Senerthik & QRsystem. CAD-NET is available on either 3-1/2" or 5-1/4" diskettes. **For more information: Senergy 1-800-221-WALL. Leaders in EIFS.**

Senergy

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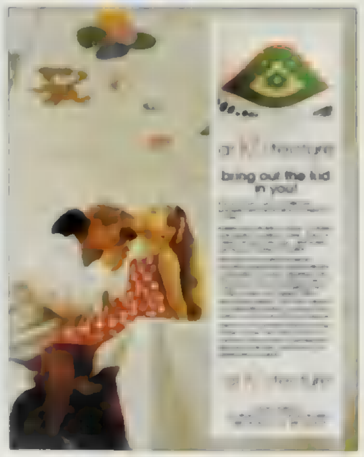
Interior Systems LaCrosse



Ark*id*tecture Funscapes is the newest addition to **Interiors Systems' Signature Series**. The Ark*id*tecture collection uses a unique computerized cutting system to produce standard and custom acoustical [illegible] designs for [illegible] children's clinics, [illegible] daycare centers, [illegible] Use single or multiple [illegible] with any design [illegible] or color. Call 1-800-[illegible]

Interio[illegible]ms

Circle 72 on inq[illegible] card

Stone Panels

Ultra-Lite natural granites, marbles, limestones & slates. Offering natural stones with 80% less weight. Reinforced for high impact & flexural strength. Especially well suited for renovation [illegible] reclad. Saves on back-up framing & structure requirements. Reduce installing labor costs. Used on building exteriors throughout the world. Also elevator cab & lobby cladding, ceilings & locations requiring real stone but less weight.

Stone Panels, Inc.

Circle 73 on Inquiry card

REASONS Stacking System for Improved Office Spaces

REASONS from Transwall Corp., a manufacturer of movable office partitions & systems furniture, is a new stacking system designed to provide improved office space facilities with maximum flexibility & a minimum of parts inventory. It offers quick off-module changes for work surfaces [illegible] overhead storage, which can easily be rearranged on horizontal rails without structural panel changes. Total wire management is provided in the 4" thick panels, as well as an unlimited choice of aesthetic color selections.

Transwall Corp.

Circle 74 on Inquiry card

TOTAL DOOR® Systems by Openings

The TOTAL DOOR® SYSTEM is an architect-designed integrated door assembly. In includes prefinished door panels and all hardware. Fire rated pairs do not require coordinators, vertical rods, astragals, flush bolts or floor strikes. Will retrofit to any frame. Meets all codes and ADA. Wood and metal faces available to 3 hours. Lifetime limited warranty on locks and panics. Call OPENINGS®, 40 West Howard, Pontiac, MI 48342 (810) 335-7380)

Openings

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Brass 'n Color® SpaceSaver™

NIGHTINGALE
Brass 'n Color SpaceSaver
SPACE SAVING BEAUTY, CONVENIENCE AND SECURITY.

New Brass'n Color SpaceSaver Series bedside lamp for resident rooms feature a secure cabinet mount to prevent tip-overs & tampering. Lamp is available in 8 standard colors & 1500 custom colors. Off-white PolyLast™ shade looks like fine linen pleatwork, but is actually made of a tough, high-impact polymer. Optional compact fluorescent model allows the use of low wattage energy-efficient bulbs, save up to 70% on energy consumption. Many other innovations for enhanced resident & staff security. Manufacturer offers Free 30 Day Trial. 3726 N. Booth St., Milwaukee WI 53212

Adjustable Fixture Co.

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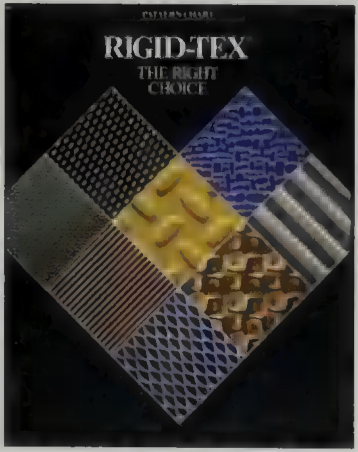
Textured Metals



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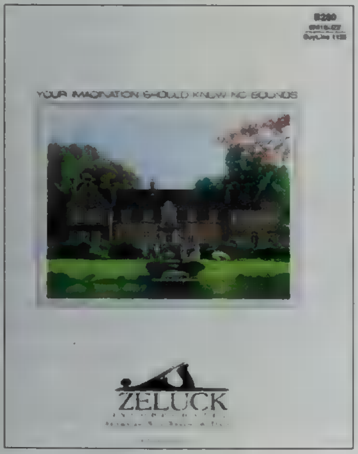

For 75 years, Zeluck has served both architects and custom builders with architectural wood windows and doors unparalleled for flexibility, quality and service. Zeluck offers a wide selection of glass and hardware, and timber from responsibly managed forests. Our triple hungs, European casements, tilt & turns, copper clad, bent units, bi-folding doors, lift-sliding doors and French doors are but a portion of our product line. Whether a custom home, hotel, institution or historical project, we can make your fantasy a reality. For a free catalog, call 800-233-0101 or 718-251-8060.

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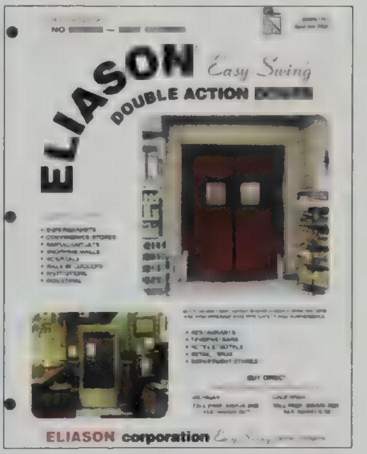

Eliason has announced the availability of their NEW 1995 Easy Swing Door Price/Spec Catalog. Doors are illustrated in full color with complete specifications, technical and application data. They are double action, open to finger touch and close with a safe, gentle time delay action. Doors can be specified and purchased direct. A bound catalog will be sent no charge. Eliason Corp., P.O. Box 2128, Kalamazoo, MI 49003

Eliason Corporation

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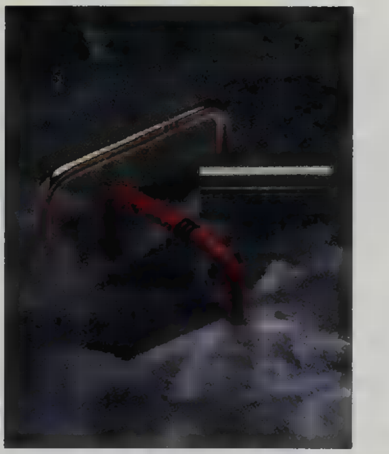
Cabinet Hardware/ Bath Accessories



Green Street Details offers a complete line of contemporary and transitional cabinet hardware and bath accessories. Components are precision machined, hand finished, and assembled at their own manufacturing facility in Portland, Oregon insuring complete quality control and on time delivery. Custom projects, finishes, and colors are welcome. Call (800) 275-7855 for more information or a free catalogue.

Green Street Details

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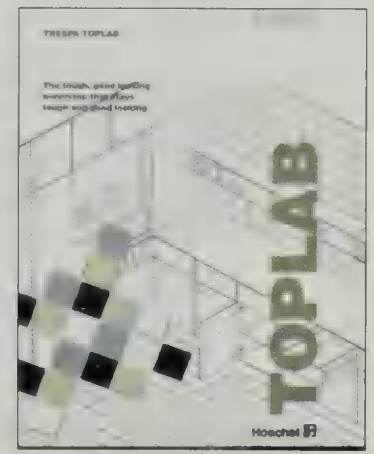

Trespa® Toplab® grade resists strong acids, e.g. 96% Sulfuric, and other chemicals. Toplab is durable, easy-to-clean, and available in colors. It will not rot, rust, delaminate, or support bacteria. Toplab is available in sizes up to 1" thick and 12' in length; it remains flat for excellent butt joints and is 25% lighter than epoxy. 1-800-4-TRESPA.

Hoechst Celanese Corp.

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Texas Tech University College of Architecture Senior Level: In-depth experience in architectural practice and teaching background both required. Will teach design studios for B.Arch and M.Arch., one or more lecture courses, and administer the Professional Program. Appointment as assoc. or full professor depends on qualfications. Those with experience in Health Care Design are encouraged to apply. Must have M Arch or higher degree and possess distingushed record of achievement in practice, teaching and/or research. Send CV, brief summary of goals, and photocopies of recent professional work with names of 3 references to: Search Committee, College of Architecture, Box 42091, Texas Tech University, Lubbock, TX 79409 Consideration begins 2/27/95. AAEEO Employer.

Associate Architect: Apply Computer Aided Design, including use of AutoCAD and DataCAD to work in environmental design, landscape architecture planning, and architectural development of commercial projects. Specific duties include site design, drafting of structural steel and reinforced concrete designs, construction documentation, water color renderings and perspective for presentation. Will also involve computer file management and database maintenance Requres 1) A Masters degree in Architecture, 2) One year experience in the job offered or one year as a Graduate Architect, 3) The required one year experience must include presentation drawing and use of AutoCAD and DataCAD for commercial projects 4) Two months experience in landscape design and color perspective renderings and 5) Completion of one graduate course in Computer-Aided Design and one graduate course in Planting Design $28,000/yr. 40hrs./wk. Must have proof of legal authority to work permanently in the U.S Send 2 copies of Resume, Transcript, and Experience Letters to Illinois Dept of Employment Security, 401 S. State St., 3 South, Chicago, IL 60605, Attn Dennis Jones Ref #V-IL-12352-0 No calls. An Employer Paid ad

Intern Architect required. Architectural production of preliminary design concepts, design development packages & production of architectural construction documents Drafting using standard techniques & AutoCAD software as well as creation of perspetives color rendering water color drawing & oil painting Bachelors Degree or equivalent required in Architecture, plus 1 [illegible] in the job duties described [illegible] ity level project experience [illegible] satisfy the experience [illegible] licant must have completed 5-y[illegible] 4-year Bachelors and at least [illegible] Master's degree to be eligib[illegible] for [illegible] as Intern Arc[illegible] eligib[illegible] license is a requi[illegible] this position. Must have proof [illegible] ority to work in the U.S Salary - $24,500/year for a 40 hour work week. Interested applicants contact the Oklahoma Employment Security Commission, 110 S. Hartford, Suite 106, Tulsa, OK 74120 (ID #7207). Phone: (918)592-2110. Refer to job order number 145094. Ad paid by an Equal Opportunity Employer.

Project Architect-Work Primarily on design projects for Eastern Europe. Develop conceptual design of the project. Review and generate construction drawings, specifications and programs. Review and grant approval in the design development phase. Assist in the tendering process for the project, especially in cases where cost saving are needed. Review final architectural schematic design documents and drawings and final specifications so that they adhere to the agreed upon design concept and the design standards and criteria of the employer. Assist the interior designer with a design brief, sketches and questions about functional layouts. Requires Bachelor's in Architecture or foreign eduction evaluated to be equivalent in US to same; 2 years direct experience or 3 years experience as an Associate Architect (related experience must include design of Eastern European commercial projects, including luxury hotels). May be asked to provide portfolio. Salary, $34,700/yr., 40hrs. P.W. no o.t., 8:30 A.M. to 5:00 P.M. M-F. Must have proof of legal authority to work permanently in the U.S.. Send 2 copies of resume to Illinois Department of Employment Security, 401 South State Street-3 South, Chicago, IL 60605. Att: Leila Jackson, Ref. #V-IL 12226-V. No calls. An Employer Paid Ad.

Architect responsible for all phases of administrative, residential, educational, sports and recreational projects including schools, retirement centers, casinos, hotels stadiums, sports arenas, sports clubs and facilities for overseas clients, applying knowledge of design, construction procedures, local zoning and building codes, and local building materials; performs each phase of project including programming, schematic design, design development, contract documents, construction administration and field observation; will consult with clients in Bulgaria, Eastern Europe, Lebanon and Middle East to determine functional and spatial requirements of new structures, renovations, and contractual issues; prepares information regarding design, specifications, materials, and equipment, estimated costs, and construction time; plans layout of project and integrated engineering elements into unified design for client review and approval; prepares scale drawings and contract documents for building contracts; assists client in obtaining bids and awarding construction contracts; acts as overseas marketing manager and travel within Eastern Europe, Lebanon and Middle East countries several times yearly. Applicants for this position must be experienced in architectural marketing in Middle East and Eastern European Countries, must read, write and speak Bulgarian and Russian fluently, including architectural terminology. Applicants for this position must possess a US or foreign architect's license, 5 years experience as architect. Must have proof of legal authority to work in the United States. 40hrs M/F, 8:00 AM to 5:00 PM, $30,000/yr. The job order number for the job opportunity is 194725. Send resumes to Shirley J. Gregory Missouri Division of Employment Security, 1411 Main Street, Kansas City, Missouri 64105-2187. An employer paid ad.

Director of Design for established, expanding, professionally oriented Florida A/E firm Unique opportunity for career advancement, design challenge, client liaison, project management and marketing. Excellent benefits. Must be graduate, registered architect, capable of Florida registration, with minimum 10 years hospital and industrial experience. Ralph Hahn and Associates, Inc. Engineers - Architects - Consultants, 500 South Australian Avenue West Palm Beach, FL 33401.

Marketing- Sales Manager for the Health Care New Construction Market. Self-starter wanted with background in conceptualizing and selling modular health care structures and/or equipment. Experience in working with architects and engineers required. We are a successful $80 million international speciality company headquartered in New York City with convenient access for individuals living in Manhattan, New Jersey, Long Island and Westchester. Please write with full particulars, including salary history to: P-7577, AR.

Manager-Technical Services - design layout of aluminum forms for residential, commercial and industrial projects, produce layout plans utilizing CAD, dev software for design procedures; coord with architects on developing schedules according to plan and details. MS Architecture with 2 yrs. arch. exp. and working knowledge of MiniCad + 5.0 and Autocad v 12. Speak, read, write conversational and technical French and Arabic for review, discussion and translation of design plans, specs and other related architectural documents. 40 hrs/wk., $30,000/yr. The Job Order # for the job opportunity is 200409.Send resume to Shirley J. Gregory, Missouri Division of Employment Security, 1411 Main Street, Kansas City, MO 64105. Must have proof of legal authority to work in the U.S.

FACULTY POSITIONS VACANT

Architecture Ball State University Muncie, IN- The Department of Architecture is seeking outstanding candidates for two tenure-track positions at the Assistant Professor level beginning August 1995. Opportunities exist to teach in the highly regarded undergraduate professional degree program and/or the graduate programs in architecture and preservation. TheMaster of Architecture degree or equivalent is required. Preferred qualifications are professional registration, a record of research and publication, or and publication, or experience in teaching or professional practice. Responsibilities each semester include teaching design studio, and courses in one or more of the following areas; design communication and computers; history, theory and preservation; construction technology; environmental systems;

structures, research and methods; or professional practice. Review of applications will begin 15 of March 1995 and continue until the positions are filled. Send letter of application, curriculum vitae three (3) letters of reference,and samples of student and personal work to Marvin Rosenman, Chair, Department of Architecture, Ball State Univeristy, Muncie, IN 47306-0305. Ball State University is an Equal Opportunity, Affirmative Action Employer and is strongly and actively committed to diversity within its community.

California State Polytechnic University, Pomona. Dean of the College of Environmental Design. Applications and nominations for the position of Dean of College of Environmental Design are invited. Duties and Responsibilities: highly responsive to student and faculty academic needs; able to communicate the strengths and accomplishments of the College to external forums; responsible for fiscal and personnel mgmt, strategic planning, development, and excellence in teaching, research, and equity efforts. Req. qualifications: earned doctorate or terminal master's degree; a record of teaching, research, and scholarship to support a Sr. faculty appt; three or more yrs of successful admin experience requiring academic leadership and stewardship. Date of Appt: 7/1/95. Willing to negotiate an earlier or later date. Salary: Commensurate with qualifications and experience; attractive benefits package. Committee consideration of completed applications will begin on February 1, 1995. For Application/Job description call (909) 869-3334 or E-mail VEBILLUPS@CSUPomona.EDU. AA/EOE.

Dean of the College of Architecture and Planning - The University of Colorado at Devner invites applications and nominations for the position of Dean of the College of Architecture and Planning, to assume duties July 1, 1995. The Dean is responsible for the leadership and administration of the College and reports to the Vice Chancellor for Academic and Student Affairs of the University of Colorado at Denver. The College of Architecture and Planning includes graduate program in Architecture, Urban and Regional Planning, Landscape Architecture, and Urban Design offered on the Denver campus; and an undergraduate, interdisciplinary program in Environmental Design offered on the Bolder campus, of the University of Colorado. Students include 500 undergraduates in the four-year program 300 graduate students in accredited professional programs, and 40 students in advanced studies programs. The applicant or nominee should have: 1) a distinguished record in teaching and in research, practice, and/or other creative work warranting a tenured appointment as a full professor in one of the College's programs; 2) a record of significant administrative accomplishment, and the potential to successfully administer an organization operation on two campuses 3) an ability to represent the diverse programs within the College, both within and outside the University; and 4) an ability to maintain and promote relationships with and to raise funds from the professions, alumni, and other extramural organizations and sources. Consideration of completed applications begins on February 10, 1995 and will continue until the search is completed. Completed applications, consisting of a letter summarizing qualifications, a current resume, and a list of five references (addresses and phone numbers), should be sent to: Chair, College of Architecture and Planning Dean Search Committee University of Colorado at Denver, Campus Box 168, P.O. Box 173364, Denver, Co 80217-3364. The University of Colorado at Denver is committed to enhancing the diversity of its administration, faculty and staff, and to program access for persons with disabilities, and invites and strongly encourages nominations of and applications from women, members of ethnic and racial minorities, veterans, and people with disabilities. Alternative formats of this ad or job description are available upon request for people with disabilities.

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OFFICIAL PROPOSALS

REQUEST FOR QUALIFICATIONS PROGRAM MANAGEMENT CONSULTANTS

The New York City Department of General Services (DGS) is seeking to establish a list of prequalified consulting firms with experience in program management to implement an American with Disabilities Act (ADA) Compliance Program in connection with PW282. This program is comprised of identifying and correcting ADA deficiencies in the City's inventory of owned and leased buildings, which consists of twenty-five hundred to four thousand sites. DGS may invite firms on this list of pre-qualified consultants to receive a Request For Proposal (RFP), without additional public notificat-ions, on selected contracts involving the following work: A) Project Management, B) Survey, C) Design, D) Construction Documents, E) Construction Management.The criteria to pre-qualify consultants shall include, but will not necessarily be limited to the following: a minimum of five years experience in program management; experience in project management, survey, design and construction management; proven ability to accurately and expeditiously prepare relevant documentation; demonstrated skill analyzing ADA deficiencies; completion of relevant projects; staffing capabilities; compliance with Minority and Women Business Enterprise Program; systems design/management capability; experience in multi-site management; experience with Federal, State, and New York City government. The consultants will be responsible for the following: project management; on-site-surveys; reports; deficiency correction recommendations; development of methodology to achieve earliest ADA compliance; design; cost estimate; construction documents; and construction management. Respondents may be invited to an interview at which time they should expect to demonstrate their experience and capabilities relating to the criteria and responsibilities listed above. Interested firms should submit Standard Forms 254 and 255 with other pertinent information to: James Cerasoli, Professional Contract Unit, Division of Design and Construction Services, 1 Centre Street, Room 2141, New York, NY 10007, telephone (212) 669-2353, facsimile (212) 669-2951. Rudolph W. Giuliani, Mayor, William J. Diamond, Commissioner.

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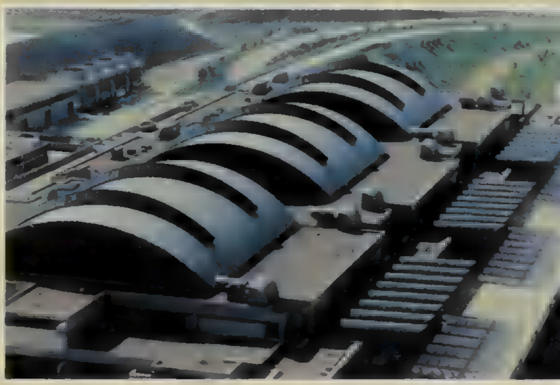

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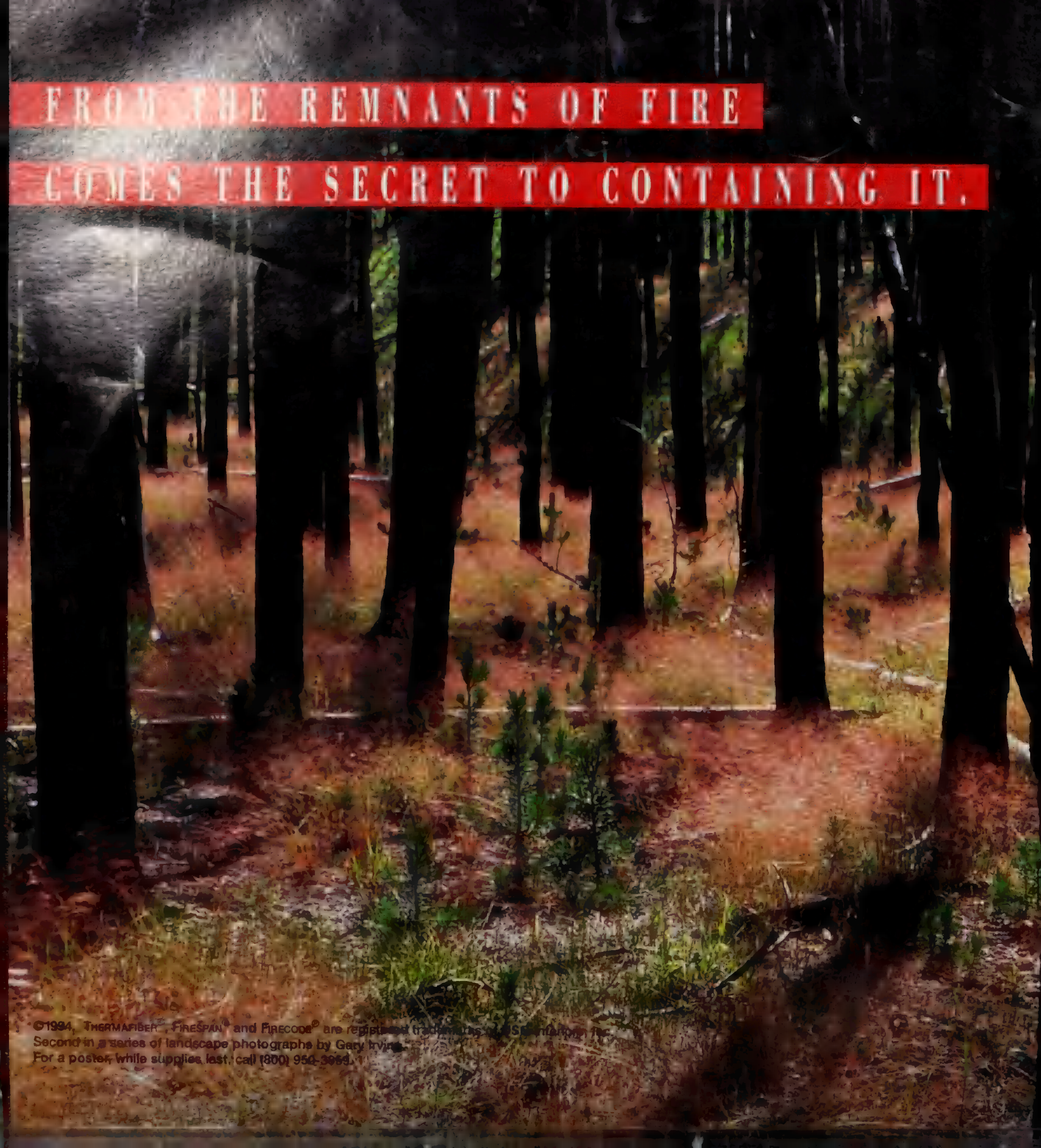

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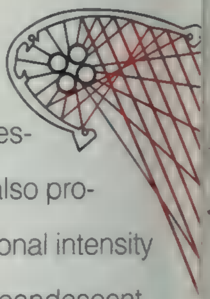

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S. Leonard Auerbach & Associates, Lighting Designer

Scottsdale Mall, South Bend, Indiana **30**

SDI.HTI, Architect
Craig A. Roeder Associates, Lighting Designer

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Prevail Under Indirect Light at Trading Floor and Offices/Briefs/Lighting Creates
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Cover:
Scottsdale Mall, South Bend, Indiana
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A selection of custom colors, 7100 Series shown.

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Submissions should be mailed to:
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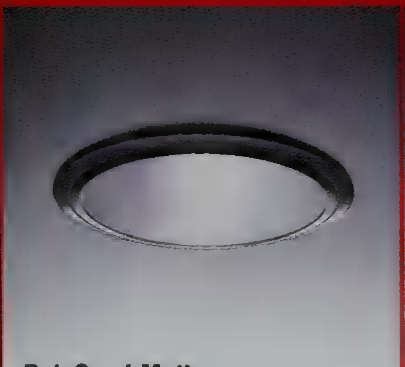
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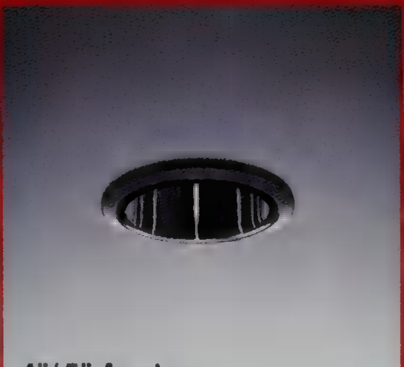
4"/ 5" Aperture

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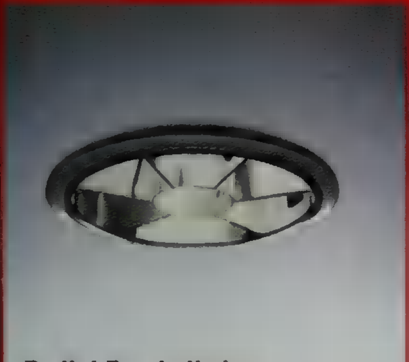
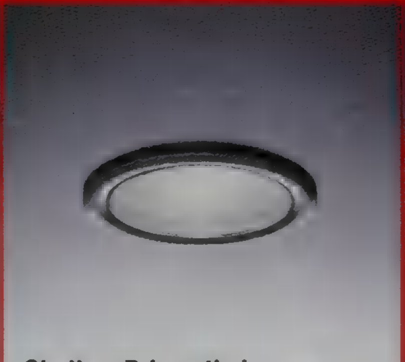
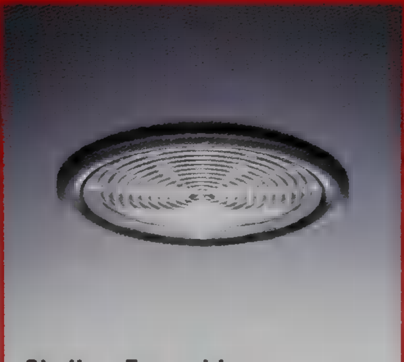
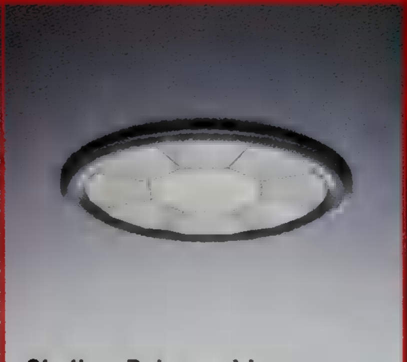

Radial Parabolic Louver


Shallow Prismatic Lens


Shallow Fresnel Lens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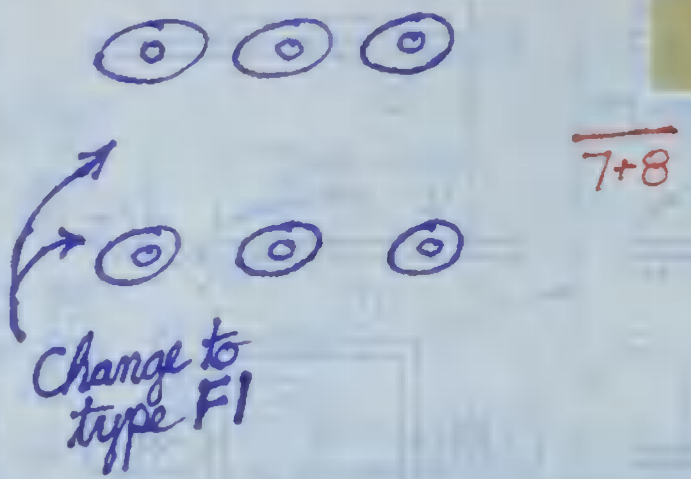

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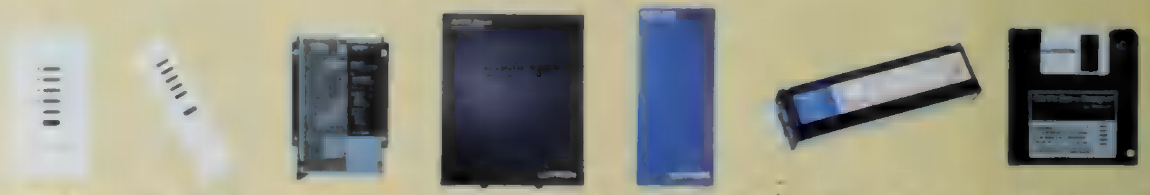

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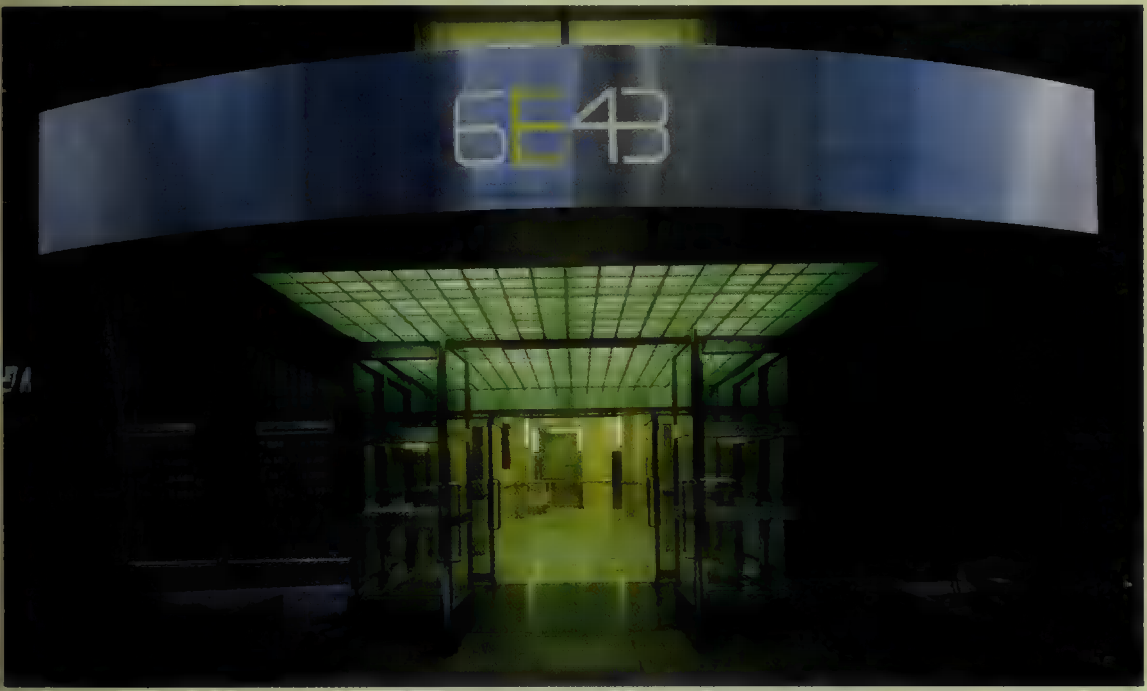
New York City

Canopy and Lobby Renovation Bridges Outside with In



Machinst and Gray Associates Architects and Focus Lighting have used a well-lighted exterior canopy to draw people into the lobby of a New York office tower. The designers revamped an existing canopy—keeping the original structure—by adding a luminous ceiling underneath, and adding illuminated graphics along its sides. While the original cast a dark shadow on the north side of a narrow street, the new canopy seems to extend the lightness of the lobby to the outside. A glowing, double-height space in the lobby bridges inside and out.

Further in, staggered, fluorescent cove lights change from two tubes to one as the lobby narrows, and large, custom-designed sconces light up each of six ornate pilasters.

The mechanical systems and lighting are pushed into the corners to accentuate the height of the space and so that the vaulted ceiling above can reach up as far as possible. The effect is gives visitors a sense of lightness and the illusion of greater space.■

Columbus, Ohio

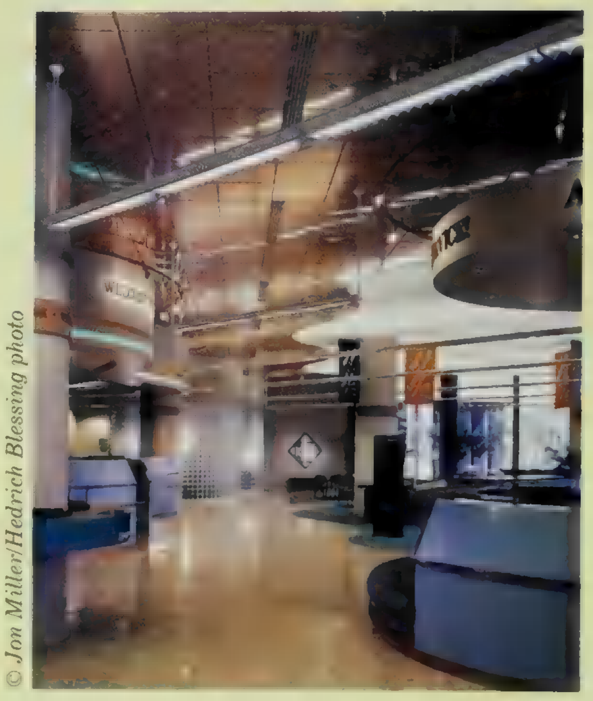
Connector for the Capital

The Ohio Statehouse is currently under renovation by Schooley Caldwell Associates in Cincinnati. The firm recently added a 59,000-sq.-ft. atrium to link the Civil War-era building to the turn of the Century adjacent judicial building. In order to bridge the two styles, and underline the freestanding nature of the new atrium "connector", skylights form a seam between each building and the atrium. Inside, spotlights hidden along the skylight highlight the columns and pilasters of the atrium. In the State House itself the 19th century lighting will be replicated.■

© Richard Loesch photos

Chicago

All that Glitters May be the Bank


© Jon Miller/Hedrich Blessing photo

Mitchell Kohn Architectural Lighting added some spark and sparkle to the Madison Bank—animating it with curved neon tubes, fluorescent bars and blazing spotlights. The metal ceiling highlights the movement of the light across the spaces.■

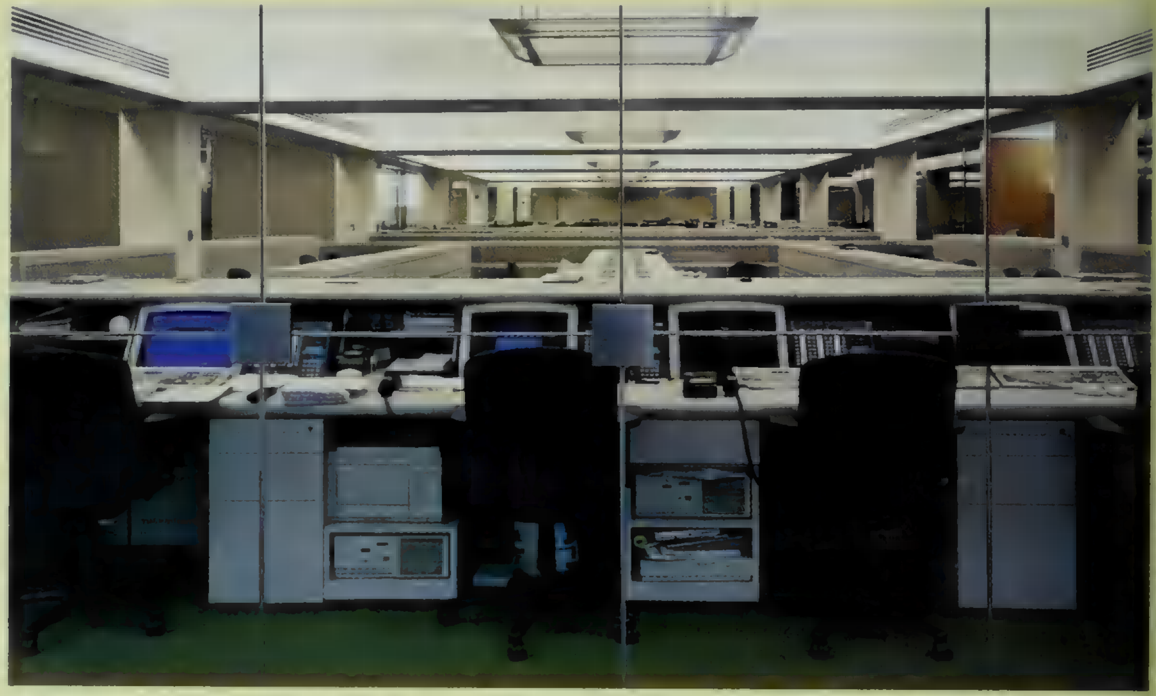
New York City

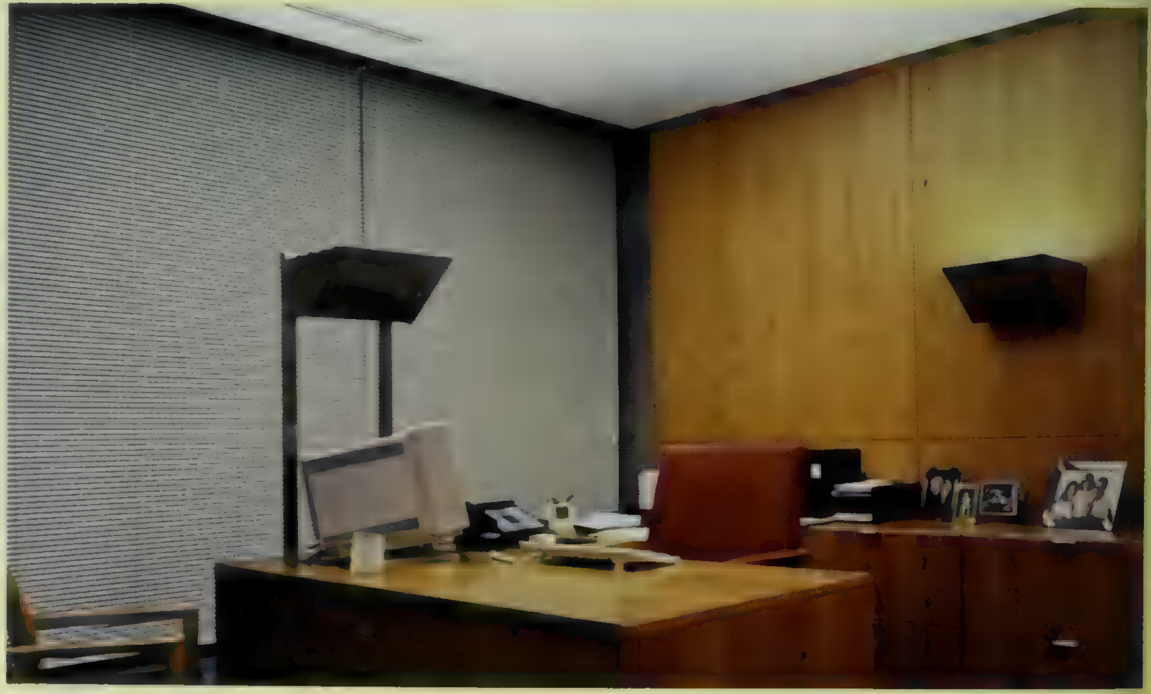
Showroom Shows Off Grazing

Dario Caima and Franco Asnaghi's Cassina showroom is marked by a lighted staircase that reflects the store's modernist aesthetic. The curving white stair connects with a wall that cuts the gallery in two. A series of overlapping scallops graze the wall surfaces.■

Greenwich, Conneticut

Clearer Screens Prevail Under Indirect Light at Trading Floor and Offices

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A narrow trading floor (top) is now awash in soft white indirect light. Sylvan R. Shemitz and Associates' mandate was to minimize the glare on rows of computer screens and to allow for a clear view across the trading room floor. Cumbersome fixtures could not be mounted on the furniture. Instead, the designers tied everything back to the edges of the space, and hid the 40W compact fluorescent fixtures in the framework of four structural bays. Additional central pendants, also fitted with 40W compact fluorescents dissolve into the ceiling. Most reflective surfaces are kept a neutral white, and users have 40 fc at the task. Even a more ornate "think tank" room off the main space needed to connect visually to the activity on the trading room floor. Here, to minimize glare, the designers balanced the light levels on either side of its glass separation wall. Individual offices (bottom) are also lit indirectly, using a combination of freestanding uplights, and wall sconces. 3700K 250W metal halide lamps are used in these fixtures.■

Design

Briefs

- The NYU School of Continuing Education offers a course on lighting for health care professionals on March 2nd from 9 am to 5 pm. Call 212/998-7080 for information.

- The deadline for the International Association of Lighting Designers Awards is March 1, 1995. Winners will be honored at an awards dinner in Chicago during LightFair.

- The Pratt Institute will hold a lecture series on the history and theory of lighting this spring at the Puck Building in New York City. Lecturers include Jamie Carpernter and Claude R. Engle.

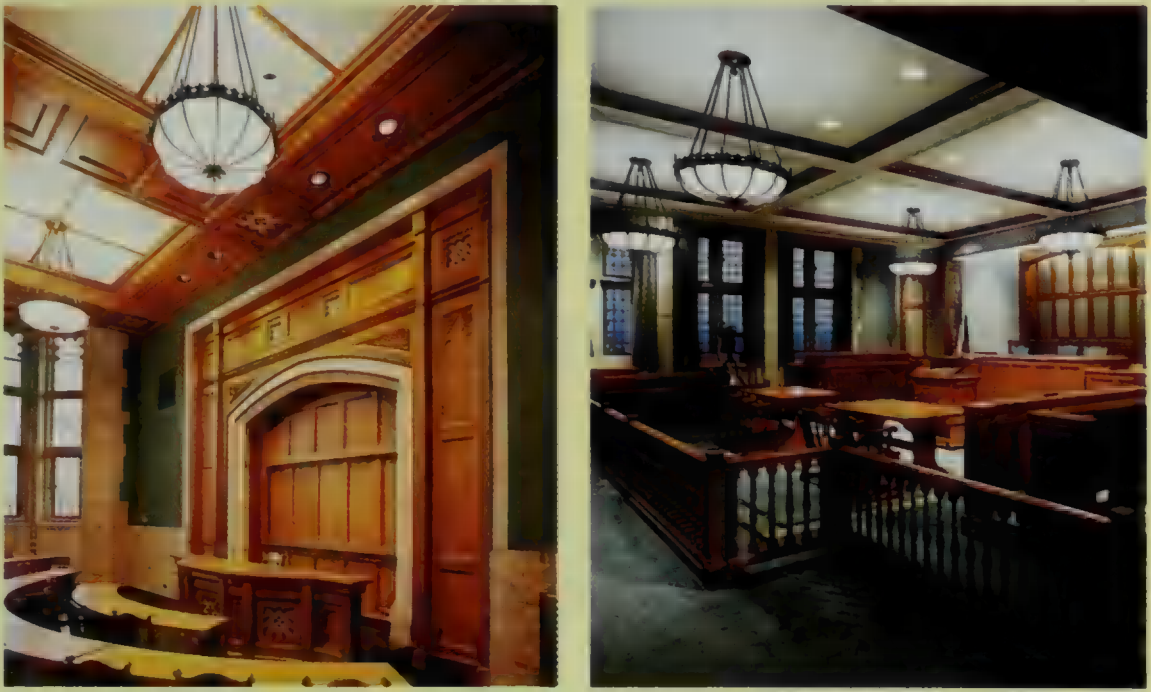
- Brooklyn's Eastern Parkway--a grand boulevard that fronts the Brooklyn Museum and other city landmarks--is alight again. The last of 627 classic New York City lamp posts are now in place after nearly a decade of work.

- The National Lighting Bureau in Washigton D.C. has expanded its data base to include new case histories of successful lighting design. The bureau is an information service founded in 1976.■

Ann Arbor, Michigan

Lighting Creates Order in University of Michigan Law School Moot Court

Quinn Evans Architects and Gary Steffy Lighting Design rehabilitated four classrooms at the University of Michigan Law School, including a Moot Courtroom. To improve the "character of the school", and to accomodate new video technology, 60-70 fc were needed, making the space both "historic and glowy". The designers decided to layer the lighting sources: indirect lighting is cast down from the ceiling, while hanging pendants add drama. Fluorescent wall slots accent the courtroom's ornate woodwork.■



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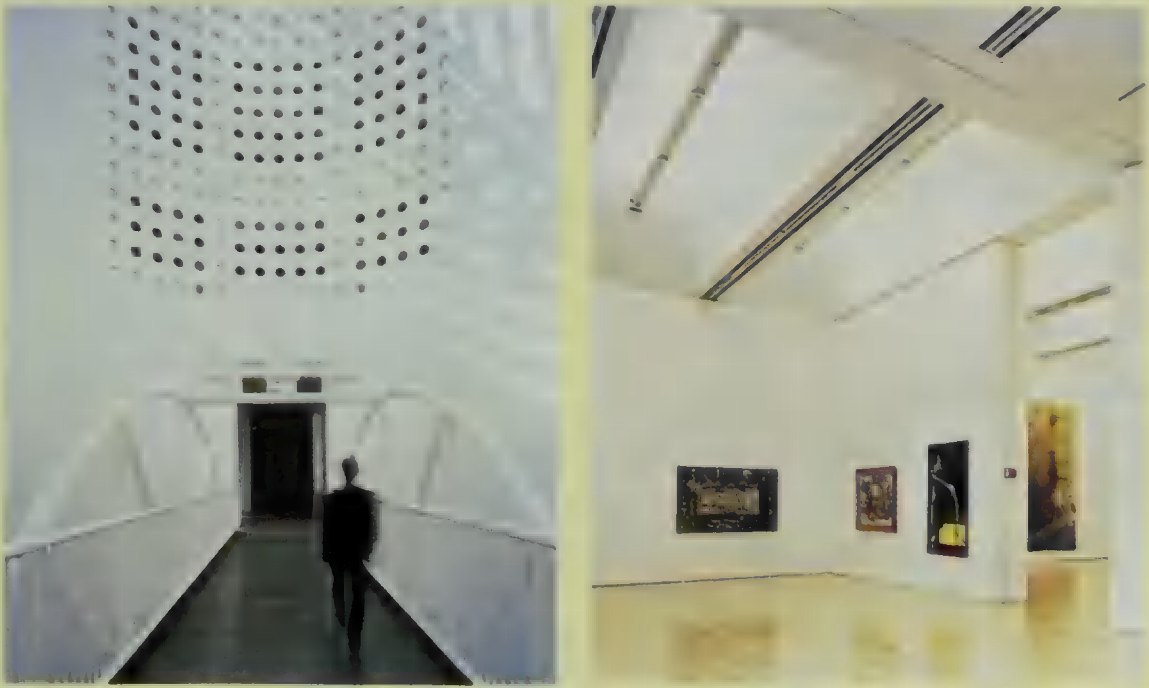
San Francisco

HOK and Botta Daylight SFMOMA Galleries

Hellmuth Obata & Kassabaum Architects designed the gallery lighting for Mario Botta's gargantuan new San Francisco Museum of Modern Art. The firm filtered diffuse daylight into the galleries through vaulted skylights designed by Botta. For darker days, light fixtures—along with structural and mechanical systems, and smoke detectors—were also imbedded in these same skylights. The idea was to give the illusion of sunlight even at night. Meanwhile, a central turret—the main architectural feature of the museum—is lighted by a huge circular skylight. A bridge crosses the five-story space and is made of a fine metal grid: high heels won't get caught but a soft light can still filter down to the space below. At night, uplights shine through the giant skylight from inside, giving it an eerie glow. ■



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Lighting a New Age with Microwave

By Lindsay Audin

You read it here first: last May, this column covered the impending introduction of microwave-based lighting systems—and now you can see them in public buildings.

In October, two were unveiled in Washington, D.C.: one at the National Air and Space Museum and the other over an outdoor promenade of the U.S. Department of Energy's (DOE) Forrestal Building. A third illuminates the exterior of Kitchener City Hall in Toronto. The Washington facilities illuminate large areas using light guides that direct output from a lamp at one or both ends of pipes 90- to 240-ft long. The Kitchener system transfers its light through optical fibers. Welcome to the lighting of the 21st century.

> *"One new microwave-generated lamp can create as much light as 150 4-foot fluorescent lamps. Early model MGLs have an efficacy of 76 l/W, and CRI of 85."*

Look mom, no mercury

To grasp the full potential of microwave-generated lighting (MGL), recall that high CRI discharge lamps (fluorescent and metal halide) produce light in a two-step process. First, electrons in mercury atoms are stimulated by electrodes into emitting mostly ultraviolet light, which is then converted by phosphors into visible light. In MGL, microwaves are beamed into sulfur gas, creating a plasma of free electrons and nuclei. The electrons emit visible light across the entire spectrum, providing 85 CRI, 6700K light (similar to what we see on a sunny day). No mercury, electrodes, or phosphors are involved.

Like no lamp you've ever seen

[illegible] like a glass Tootsie-Roll Pop, [illegible] atop a [illegible] at

[illegible]

about 300 RPM, one of these lamps produces as much light as 150 4-foot fluorescent lamps. Rotation is needed to evenly distribute light output, but advances in microwave generators may eliminate it by instead spinning the field (as occurs in an electric motor).

Out of Buck Rogers's kitchen

Magnetrons, quite like those used in home microwave ovens, create a field of 2.45 GHz (one GHz equals 1 billion cycles per second) energy in the new sulfur lamps, and, like magnetic ballasts, consume some power in the process. Early-model MGL have an overall efficacy of about 76 lumens per watt, which is about the same as magnetically ballasted T12 lamps. As microwave-generation technology improves, that number is expected to nearly double, making MGL more efficient than the best metal halide or electronically ballasted T8 systems.

MGL was first developed almost 20 years ago as a means of generating high levels of ultraviolet light (using gases other than sulfur) for industrial processes. High-quality visible light was first produced in 1990, pioneered by Fusion Systems Corp. (now Fusion Lighting, Inc.), of Rockville, Md. The first commercial product (the 3.4 kW VBL-3400) is available from Hutchins International, Ltd. (HIL), of Mississauga, Ontario, operating under a license from Fusion. It is currently used in laboratory plant-growth chambers to simulate sunlight. Fusion plans to market its own commercial product (called the Solar 1000) next year.

While the lamp can be expected to run indefinitely (since there are no electrodes or phosphors to wear out), the replaceable magnetrons presently last about 10-15,000 hours. As a result, Hutchins International provides a two-year warranty on its system. More-durable solid-state components now under development should last much longer.

What makes MGL so special?

MGL radiates across the entire visible spectrum, instead of creating "spikes" at several wavelengths like all other high-efficiency light sources. Together with its very high color temperature and CRI, a sunshine-like light is created.

Unlike the HID lamps it is sure to replace, MGL systems can be fully dimmed, have 10-second startup and re-strike times, and no lumen depreciation. Restrike times will decrease once solid-state microwave generators replace magnetrons.

By adjusting the gas mixture, ultraviolet and infrared emissions are nearly eliminated, providing high-quality light without harmful components. Unlike fluorescent lamps, there are no hazardous materials, such as mercury or phosphors, which in the future may require special disposal methods.

The very small size of the lamp allows its output to be more easily focused than HID lamps many times larger. As a result, higher optical efficiencies are possible with relatively small reflectors.

Such very high output from a small source also allows a single large MGL fixture to replace many large HID sources, such as the banks of metal halides often seen atop stadiums. Single MGL fixtures up to 30 kW, equivalent to 20 1500W metal-halide fixtures, are presently on the drawing boards. Major reductions in installation and maintenance costs then become possible.

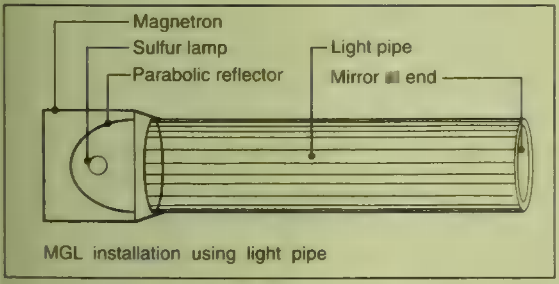
Using MGL indoors

While Lawrence Berkeley Laboratory (LBL), a DOE facility, recently produced a 100W MGL, technical and economic limitations will likely limit commercial units to outputs similar to larger HID lamps—such as those over 400 watts. Even the little LBL unit produced as much light as five 4-foot fluorescent lamps, which could present a major glare source unless properly controlled.

Such bright sources are not uncommon in industrial environments, but there are better ways to spread this high-efficiency light

Microwaves bombard sulfur gas inside a spinning glass sphere to create intensely bright light that is distributed evenly over the entire visible spectrum. Efficacy is good in early models and will improve.

A microwave-generated lamp (above) looks like a glass Tootsie-Roll Pop. It will replace HID lamps like the one on the left. Controlling the intense light will be a challenge. The basic assembly now in use is shown below.



MGL installation using light pipe

around: light guides and fiber optics provide ideal methods for distributing MGL's output. The Washington installations illuminate large spaces by directing the MGL into light-pipes, which are essentially internally mirrored conduits. Such systems have been around for nearly a decade; even residential models are now available.

The interiors of light-pipes (which can be round or square) are etched along their lengths with tiny prisms that internally reflect 97 percent of the light that strikes them. Output from a light source is conveyed by reflection until it escapes out the end, or through one side, via a diffusing medium designed to evenly distribute it in a room.

Two prototype systems in Washington release light down their entire length through a clear diffusing section of the tube running along its bottom side. The light-pipe thus conveys light across open areas nearly inaccessible to the relamping crew. Since the lamps are located at the ends (not the middle) of the pipes, maintenance costs, interruptions, and risk are greatly reduced.

In industrial facilities, terminals, tunnels—including the Moscow subway system—and other large structures, light-pipes have already proven to be a viable way to convey light into interior spaces. In new or renovated office and commercial facilities, light-pipes distributing MGL could replace many of the individually wired lighting systems presently in use. Relamping in such spaces would be virtually eliminated, since a few high-output MGL lamps could be conveniently located outside of them, possibly in adjacent corridor ceilings.

Such techniques are presently used in "clean" rooms, sensitive medical facilities and labs where interference from discharge lamps is a problem; and across industrial vats and swimming pools, where relamping is a problem. Metal-halide lamps have typically supplied the light in such systems, but their limitations, such as long startup and re-strike times, and color stability, have limited the expanded use of light-pipes. Such problems are eliminated by MGL, so there is good reason to consider combining the two technologies when lighting upgrades are considered in the future.

The downside

MGL is still so new that potential problems with it are based on conjecture. Radio frequency interference (RFI) is sure to be on the FCC's agenda when reviewing the light source because the magnetrons "broadcast" radio waves much like a radar station. Static produced by such generation could create problems when large MGL sources are located atop light poles, especially around radio-sensitive areas such as airports.

One of the primary selling points of MGL is also one of its main limitations: it is a highly concentrated light source with a dangerous potential for glare. Catching sight of 430,000 lumens getting pumped out of a one-inch sphere in terms of luminance is similar to looking directly into a very large tungsten filamented projection lamp: retinal damage is possible. Controlling glare and directing the light present challenges to tomorrow's fixture designers.

Unlike other light sources that contain their electrochemical reactions in their glass bulbs, MGL fixtures energize gases by transferring energy through their bulbs from outside. While a clear cylindrical shield limits the possibility that an electrician's hand might enter the microwave field, the potential for injury remains. Safety during maintenance (or when fixtures are damaged) becomes paramount when dealing with such high concentrations of energy.

At the present, power quality is relatively low due to the low-tech magnetrons and transformers now in use. This will likely improve as solid-state systems supplant the existing technology.

As with all other light sources, the economics of MGL relative to its competition will determine its position in the marketplace. The few operating prototypes have basically been hand-made. As is true of all new technologies, the cost of the prototypes is unrelated to what costs will be when the units are finally mass-produced.

Friends in high places

Development of this technology has been supported by some major players, including the DOE, EPA, NASA, and 3M, maker of the prismatic interiors of light-pipes. If the economics and efficiency expectations hold true, we could be looking at the first fixtures of the 21st century. ■

New Concepts In Street Lighting

A streetlighting demonstration project in Lexington, Massachusetts, seeks the preservation of the high quality of the nighttime street environment.

By Christopher Hugh Ripman, RA

Why did the citizens of one New England town reject a proposal for new high-pressure sodium street lighting that would have eliminated their outdated incandescent and mercury-vapor equipment, and saved them substantial costs on an annual basis? This question and others will be addressed during the coming year in an unprecedented field experiment as a joint effort between the town of Lexington, Massachusetts, and its utility, Boston Edison.

During the experiment, 50 luminaires of five generic types will be installed on existing poles at existing mounting heights, fitted with eight high-color rendering sources with color rendering indexes (CRIs) of 60 or greater, including several varieties of compact fluorescents. When these fixtures have been field-tested through a complete seasonal cycle and the data has been assessed, the utility will compute experience-based streetlighting rates for the lamp-luminaire combinations judged most successful, and the town will replace its existing inventory of incandescent and mercury-vapor fixtures with the fixtures derived from the demonstration project.

One result of this conversion will be savings to the town, though they will not be as great as they would be with a wholesale conversion to conventional utility-grade high-pressure sodium (HPS). But the equation to be optimized in the Lexington demonstration project is not a single-variable equation. First-cost will be only one factor in the final decision. Others will be energy efficiency, ease of maintenance but, perhaps most important, the preservation and enhancement of a significant community asset whose value is not easily calculated: the preservation of the high quality of the nighttime street environment.

Lexington's objectives

The purpose of the lighting system is to [illegible] Lexington's [illegible] the existing [illegible] using [illegible] to reduce [illegible] should provide orientation and guidance, and convey information about intersection shape and location, and the kind of street one is traveling on: arterial, collector, or residential. The utility company's motivation for sponsoring the project is to demonstrate lighting that meets demand-side management objectives, achieving customer satisfaction and competitive sourcing for lamps and luminaires, while reducing energy consumption.

Light sources

The light sources to be tested in the Lexington project have been selected for one primary characteristic: CRI of 60 or higher. The typical utility company-grade HPS lamp has a CRI of about 20; while sunlight and incandescent both have a CRI of 100. Long lamp life is also important. High-pressure sodium and mercury-vapor lamps have are rated at 24,000 hours or more. Most high CRI sources, such as low-wattage metal halide or compact fluorescent, have relatively short lives—7,500 to 10,000 hours, only 6 1/2 to 8 1/2 months when in service for 12 hours per night. In order to place these sources on a basis with the standard utility HPS lamps that is cost-competitive, innovative fixtures will be tested in the project. These luminaires will have a second optical chamber fitted with a second lamp that will only turn on after the first lamp in the fixture has failed. This will effectively lengthen the relamp cycle of the fixture until it is competitive with HPS.

Other aspects of the testing will focus on the effects of ballast quality and starting temperature. For at least one of the improved- color HPS luminaire types, a variety of ballasts will be tested to explore the influence of different ballast designs on lamp life and life-cycle cost. Solving problems with starting compact fluorescent and the low light output during periods of cold temperature will be explored through the use of new fixture designs intended to provide a better operating environment, as well as new electronic ballasts rated to start at -20F.

A problem of perception

What makes people perceive street lighting as good or bad is not just uniformity and the number of footcandles to the pavement, but also a number of other factors. These include color rendering, using lamps of a color temperature that will mimic the effect of moonlight on vegetation—the night source people have known since the beginning of time sets up their expectations for what night lighting should be like. Another factor is the creation of a "symbolic candle"—the presence of a point source visible beyond the normal cutoff angle for flat-lens cobraheads or "shoeboxes."

The project gives a high priority to maintaining a visible source, a departure from contemporary street-lighting theory. In the early days of street lighting, gas and incandescent luminaires were characterized by low output and, therefore, low brightness. People have a very positive association with fixtures like Boston's Beacon Hill gas lantern, or incandescent sources such as the "radial wave"-type, or the "admiral's hat" style. One thousand of the latter type are still in service in Lexington, and are staunchly defended by a group of citizens unwilling to trade what they perceive intuitively as an amenity for the "golden glow" of high-pressure sodium.

The evolution of street lighting

In the 1920s increasingly powerful sources combined with improved optics made wider streetlight spacing possible. At 45 lumens per watt, the mercury-vapor lamp had twice the efficacy of the incandescent lamp. That led to the development of the drop-dish-refractor cobrahead luminaire. The mercury vapor lamp uses a phosphor-coated lamp to convert ultraviolet radiation generated by the arc tube into visible light. As a result, the source brightness of low-wattage mercury lamps is relatively low.

More precise optical control was possible with the development of more modern lamps like high-pressure sodium and metal halide, which use the output of a compact arc tube, basically a point source, as opposed to that available with a much larger diffuse source, such as the overall lamp envelope, typical of mercury vapor and fluorescent. While these point sources could be better controlled through reflector and refractor designs, they were also much, much brighter—1,700,000 footlamberts for an HPS lamp compared to 22,000 for a mercury lamp. The extreme brightness of the HPS lamp led to an industry-wide shift in luminaire design

continued on page 33

[illegible] *Ripman* [illegible], Mass.

The traditional incandescent street-light reflector (1) not only redirects light to the street, it also shields the source from intruding on houses on both sides of the street, and allows a view of the filament from the roadway in both directions, conveying the sense of light far beyond the actual illuminated area of the street.

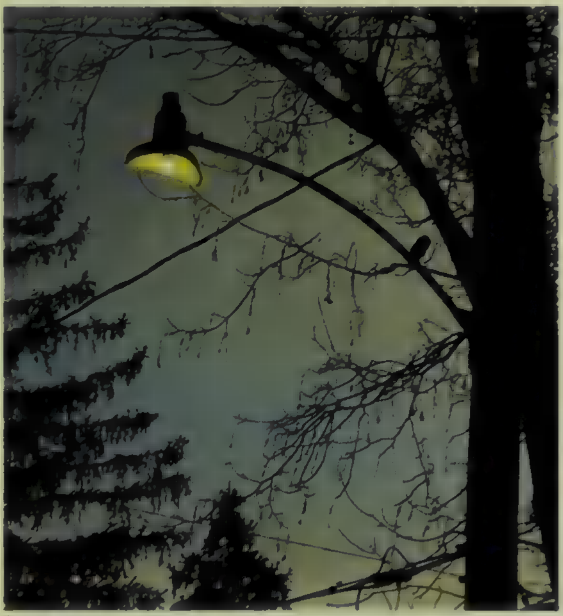
The "radial wave" incandescent on a "bishop's crook" pole is preferred (2) in the Lexington Historic District over modern equipment because the light it produces seems friendlier, and has better color rendering.

The oval drop-dish refractor of this second-generation mercury-vapor cobrahead (3) diffuses the source, while concentrating its light on the roadway.

While the color of mercury vapor resembles moonlight, glare and light intruding into houses became facts of life when America's residential streets (4) became illuminated with this type of fixture. Aside from an increased level of light, nothing distinguishes this arterial street from the residential and collector streets that are served by it.

This third generation (5) high-pressure sodium "flat-lens cutoff" cobrahead uses reflectors rather than a refractor to control glare. The result is extreme glare from the unshielded arc tube when viewed from below, and alternating pools of light and darkness when fixtures are spaced too far apart for their low mounting heights.

A typical residential street "upgraded" with HPS drop-dish reflector heads (6) is glary, but provides relatively even illumination on the pavement as well as in adjacent bedrooms.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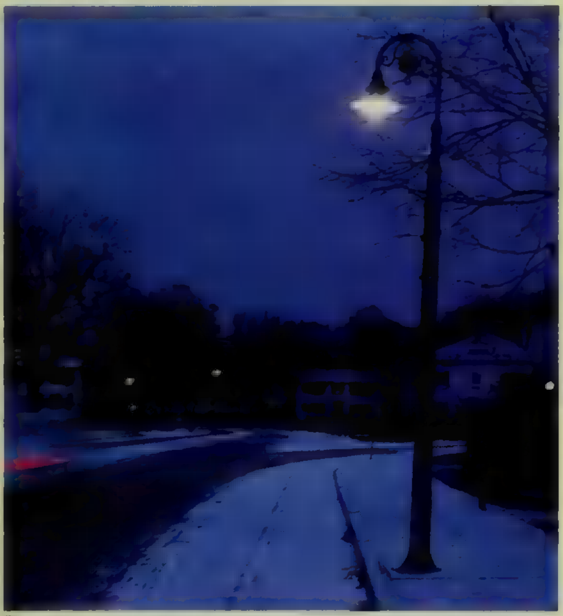
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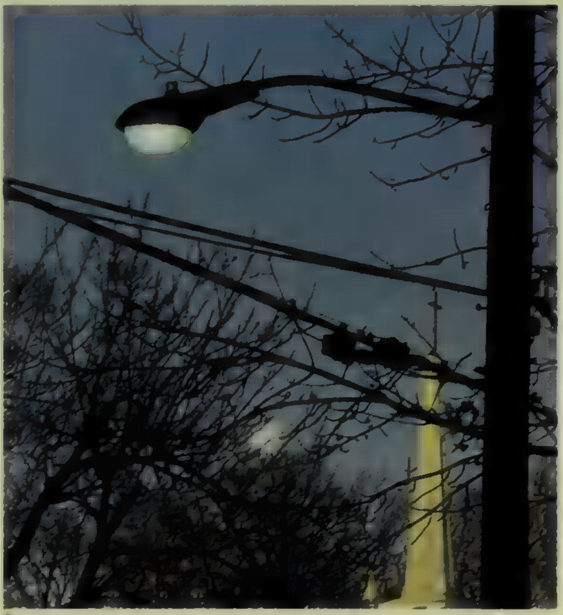
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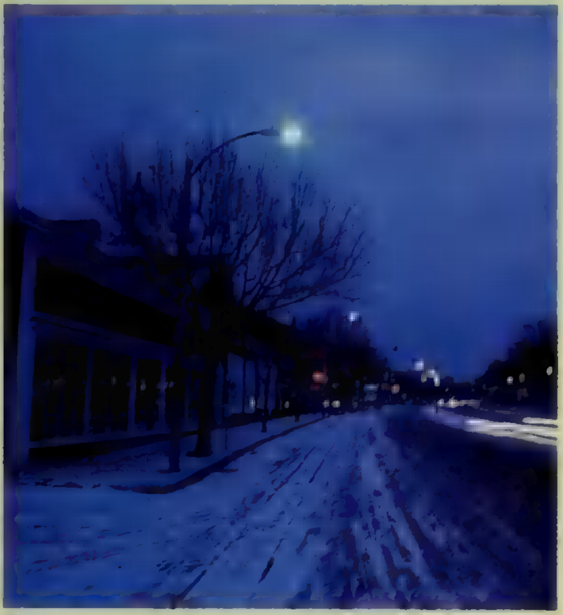
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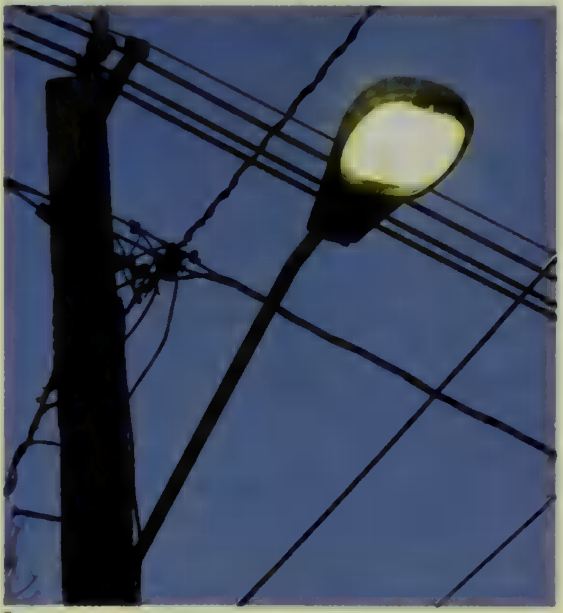
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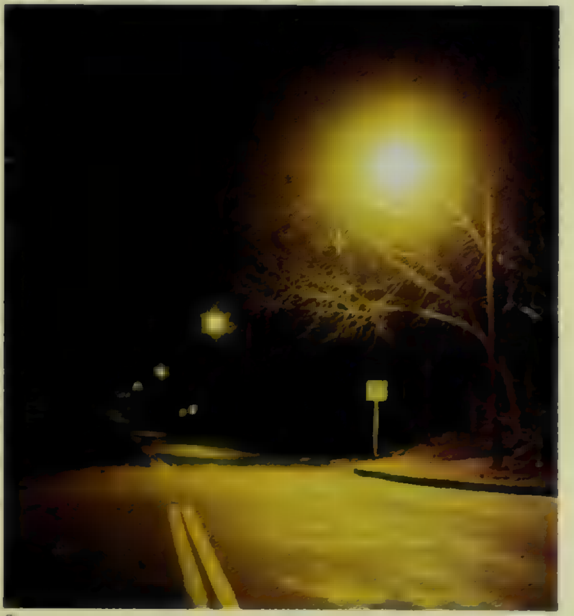
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Lights and Devices for Special Situations

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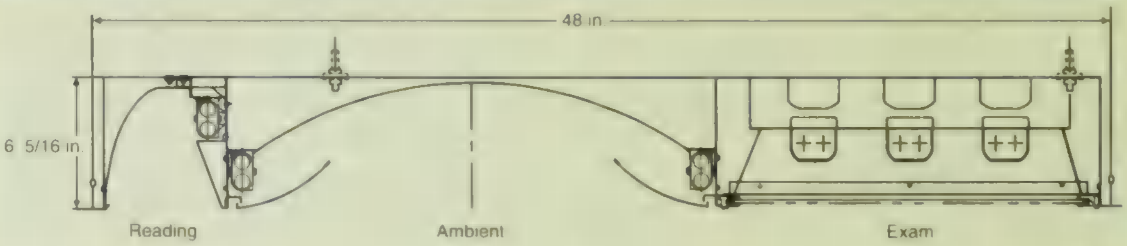

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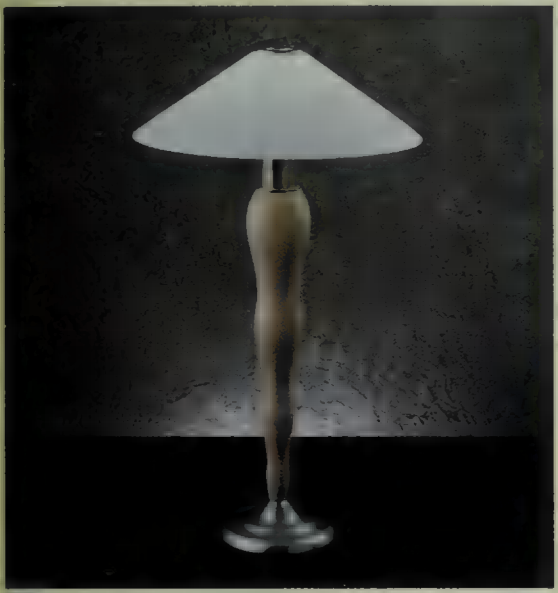
322. Patient-care light
A multifunction luminaire, Neo-Ray's 3PR was designed by Jim Kaloudis for the special illumination requirements of hospitals and other health-care institutions. A single fixture can provide contained, glare-free light for reading; soft, unobtrusive light for visiting or meals; and illumination as bright as 100 fc for medical examinations (left to right in the [illegible] above). It works on one circuit, and [illegible] switched controls (a night [illegible] can be specified). [illegible] ceiling and [illegible] finished in white [illegible] housing, [illegible] fits into a [illegible] opening. Equipped [illegible] the 3PR has no swing arms to bend or protrude, no shade to fray, and no dirt-catching shelves or rims. Light sources are six high-color-rendering 40W T5 lamps: one as the reading light, two in the ambient section, and three for the higher lumen-output needed for patient examination. The optional night light is a 7W CFL placed behind the exam light's prismatic diffuser. Electronic dimming can be ordered. 800/221-0946. Neo-Ray, Brooklyn, N.Y.

323. Framing projector
A new accessory, the DL-FP twists onto most of Lucifer's top-lamp MR16 downlights (50W maximum). Made with a molded-plastic housing, the projector comes with an internal glass magnification lens and an aluminum shutter; for extremely UV-sensitive applications, an Optivex ultraviolet lens from Bausch & Lomb may be special-ordered. Lucifer Lighting Co., San Antonio, Texas.

324. From wall to ceiling
Known for Bisque sconces in fanciful shapes like shells or sunbursts, Justice now offers pendants in the same sturdy, paintable ceramic-composite material. Hanging lights take standard A lamps and stay reasonably cool to the touch. Finish options include special treatments such as faux marble. Justice Design Group, Culver City, Calif.

325. Lamps for table and wall
Part of Boyd's ongoing American Aesthetic series of luminaires, merging natural materials with technical know-how, Squiggle



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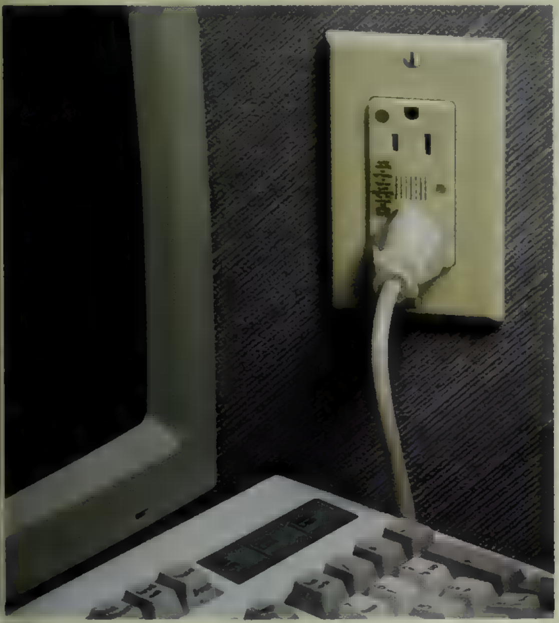

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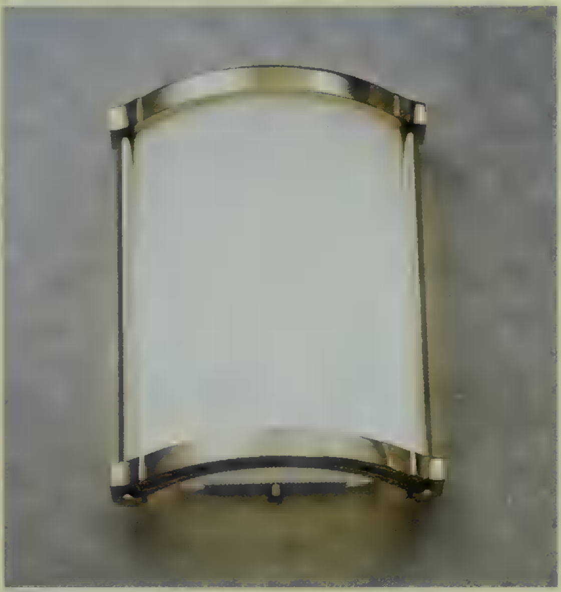

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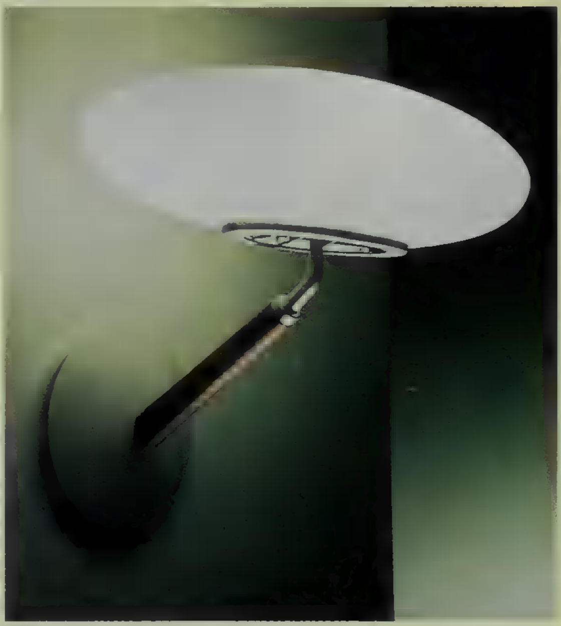

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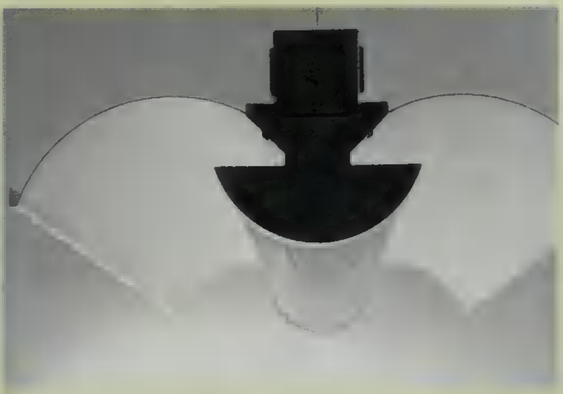

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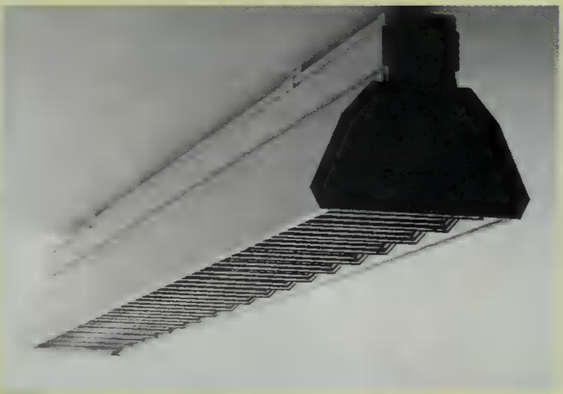

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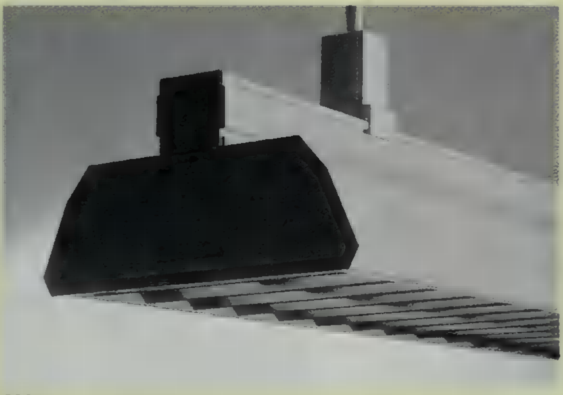

328c

(325a) could work on an office desk, in a living room, or as a bedside light. Lamp has an etched-glass shade over a standard incandescent bulb, set on a curvaceous maple column in either black or white-limed finish; base and fittings can be brass or chrome. Also from Boyd, the Medici sconce meets ADA projection standards at any height, and is suggested for commercial, hospitality, residential, and retail use (325b). Its electronic ballast is said to be noiseless as well as energy saving; light source is the newish 2D CFL lamp set behind a slumped-glass diffuser. Boyd Lighting Co., San Francisco.

326. Discrete protection

Surge-suppressor protection from voltage transients is now available in a Decora-style receptacle. Offering three-level protection within a duplex receptacle is said to be an economical way to avoid data loss and electronic-equipment damage due to voltage spikes—and solve problems of missing surge strips. Device provides line-to-neutral, line-to-ground, and neutral-to-ground protection, for itself as well as for any outlets downstream on the same circuit. A visible/audible alert activates when protection is lost. Device and surround available in all Decora colors. Leviton Mfg. Co., Inc., Great Neck, N. Y.

327. Italian ambience

Designed by Matteo Thun for Arteluce, Pao/W is a small-scale (13 in. high by 8.6-in. deep) halogen sconce UL-listed for both residential and commercial use. Diffuser is blow-molded opaline glass, held away from the wall by a tapered cherry-wood stem. There are two similarly ovoid table lamps made of the same materials, as well as the original Thun design, the Pao floor lamp. Flos, Inc., Huntington Station, N.Y.

328. Ergonomic office lighting

Zumtobel's ZX system—a low-profile power-carrying track, a plug-in fixture assembly, and interchangeable reflectors (328a) and louvers (328b and c)—permits locating luminaires to fit the light-distribution requirements of a particular space within one continuous fluorescent system. Trunks carry three circuits for tri-level switching; electronic ballasts and T8 lamping are standard. Zumtobel Lighting, Inc., Garfield, N.J. ■

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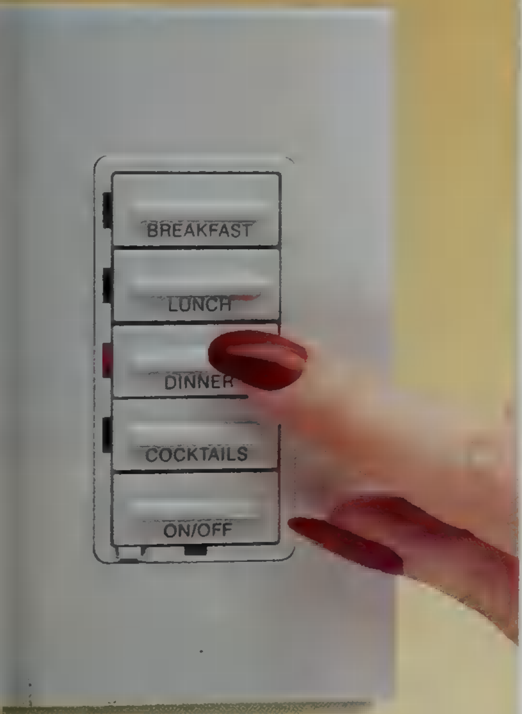

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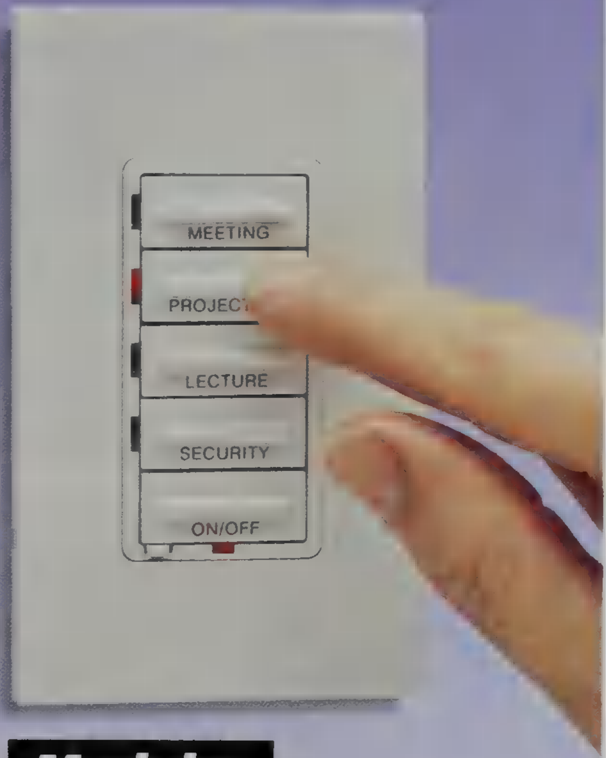

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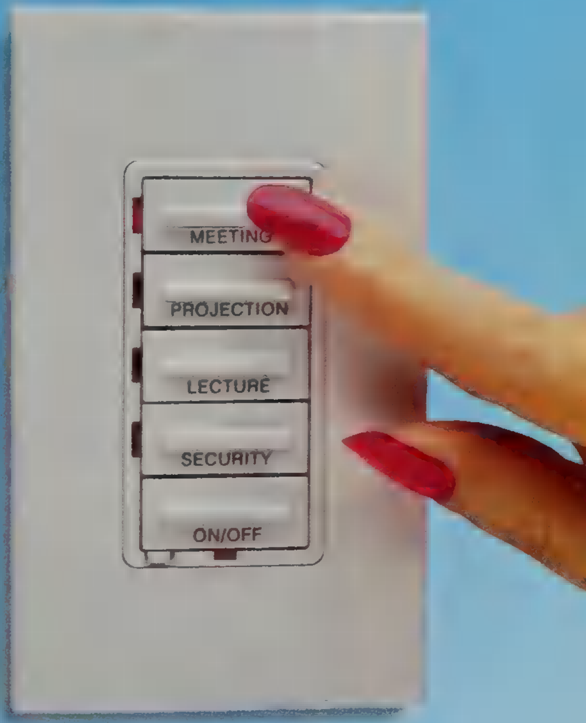

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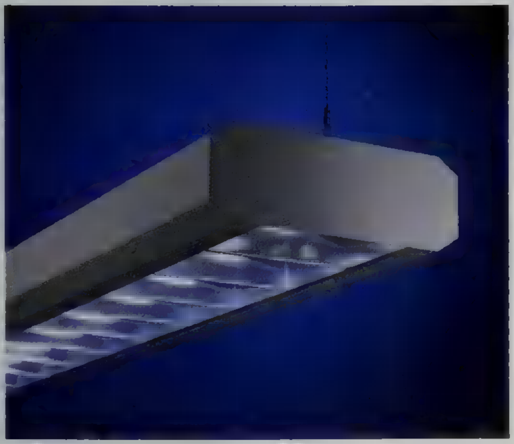

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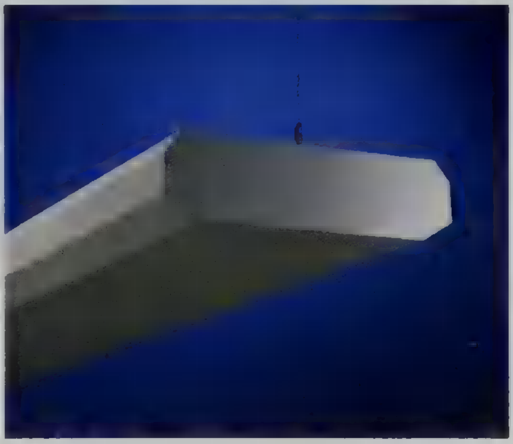

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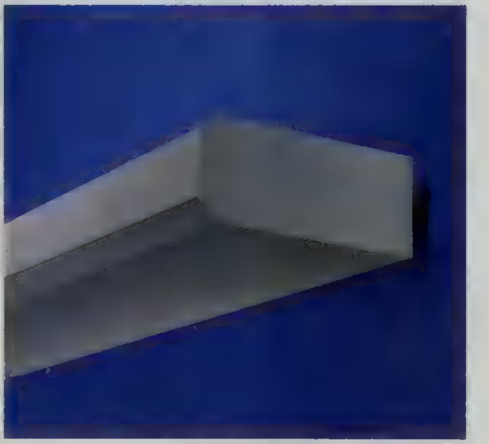

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Lighting for Makeovers

In this issue we are presenting three interior lighting stories that explore different issues involved in using lighting to revitalize spaces, and a fourth involving exterior relighting issues.

One involves the relighting of the 1973 Hyatt Regency Hotel in San Francisco, by S. Leonard Auerbach and Associates (the architectural half of this firm is now known as Auerbach + Glasow; the theater and media portion is Auerbach + Associates). This project draws on the firm's experience in theatrical lighting, using tight beams of incandescent light to graze planes, and bring the space alive.

A second project, the made-over Scottsdale Mall in South Bend, Indiana, features the vibrant color typical of Craig Roeder and Associates' work. A third project, the Japanese American National Museum in Los Angeles, by Lighting Integration Technology, shows how a firm tackled the problems imposed on them when adding new lighting to a landmarked Buddhist temple.

For something completely different, but still in the makeover vein, an article by Chris Ripman examines a project in Lexington, Massachusetts, that intends to find alternatives to relighting streets with HPS cobrahead fixtures, while still saving energy and maintaining the intimate nighttime quality of that city's historic streets. Energy columnist Lindsay Audin examines sulfur-gas lighting, an intense new light source that's going to give designers who renovate in the future a whole set of new challenges to think about.
Charles Linn

Manufacturers' Sources listed on page 32

Cultural Reference

Japanese American National Museum
Los Angeles, California
Jim McElwain, Restoration Architect
Gene Takeshita, Exhibit Designer
Lighting Integration Technology, Lighting

The Japanese American National Museum is located in a landmark downtown Los Angeles building that was, fittingly, once a Buddhist temple. The museum's opening exhibit chronicles the stories of the Issei, the first generation of Japanese immigrants in the United States.

Working closely with the curators and the exhibit designer, Gene Takeshita, the lighting designers, Lighting Integration Technology (LIT) of San Francisco, illuminated the space in a way that is sensitive to the existing space as well as the museum's subject.

"The biggest challenge was working with the landmarked building," says LIT principal Susan Huey, who designed the lighting along with fellow-principal Hiram Banks. No new fixtures could be hung from the ceiling or walls. Their solution was to build up a new wooden floor, and have freestanding fixtures throughout the 4,200-square-foot space.

Accordingly, the designers created electrical poles connected by cables that suspend custom-designed cone-shaped fixtures. Each pole has a spool-like top which functions as a "cable junction" to insulate and separate the cables. This ingenious arrangement, besides adding design interest, allows for the flexibility critical to museum design—fixtures can be located anywhere along the length of the cables, and the poles can be relocated as exhibits change. The cables, says Huey, are also a cultural reference, reminiscent of the overhead wiring used to power electric trains, familiar sights to Japanese who came to the country as laborers, and many of whom worked on the railroads.

The exhibit is made up of extremely fragile artifacts. Small, cool, MR16 lamps were a natural choice for the light sources. Bausch and Lomb Optivex filters were used to shield the exhibit from ultraviolet degradation, and a dimming system was added to control the intensity of the light. The project was exempted from Title 24 because of the existing building's landmark status.

Four ceiling-mounted chandeliers were exempted from the stringent landmark status because they replaced the existing paper chandeliers. The paper has been replaced by glass, which houses compact fluorescent lamps. The distinctive chandeliers add another note of cultural continuity to this unusual project. *Nayana Currimbhoy*

Credits
Japanese American National Museum
Los Angeles, California
Architect: *Jim McElwain*
Exhibit Designer: *Gene Takeshita*
Lighting Designer: *Lighting Integration Technology—Susan Huey and Hiram Banks, principals*
Interior Designers: *J. T. Nakaoka and Associates*
Exhibit Fabricator: *Rick Nagano*
Exhibit Preparer: *Jeff Haskin*
Sound System: *Bernie Krause*

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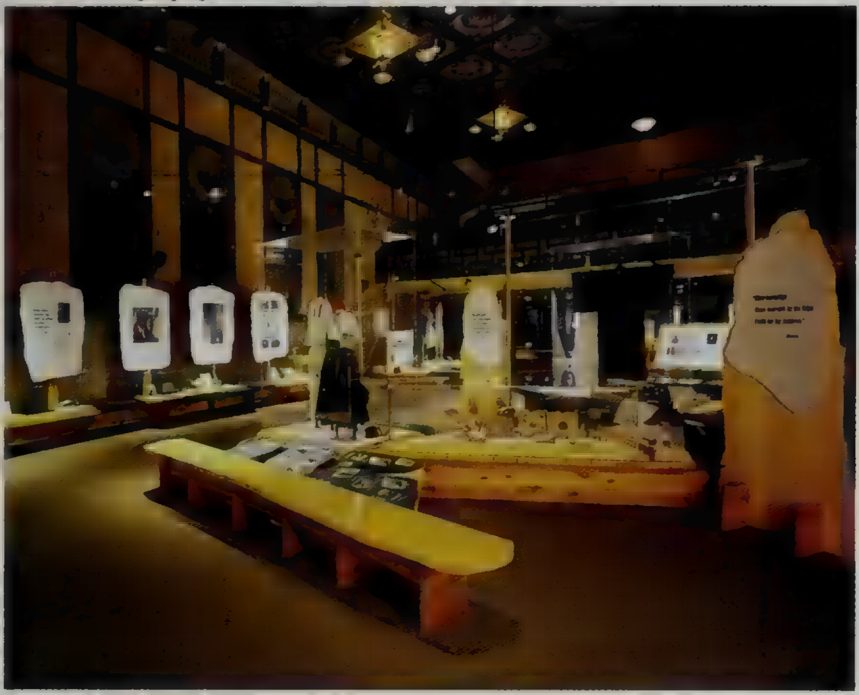
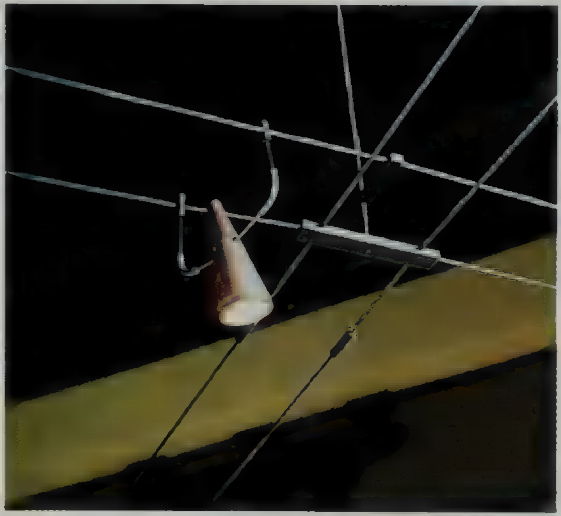


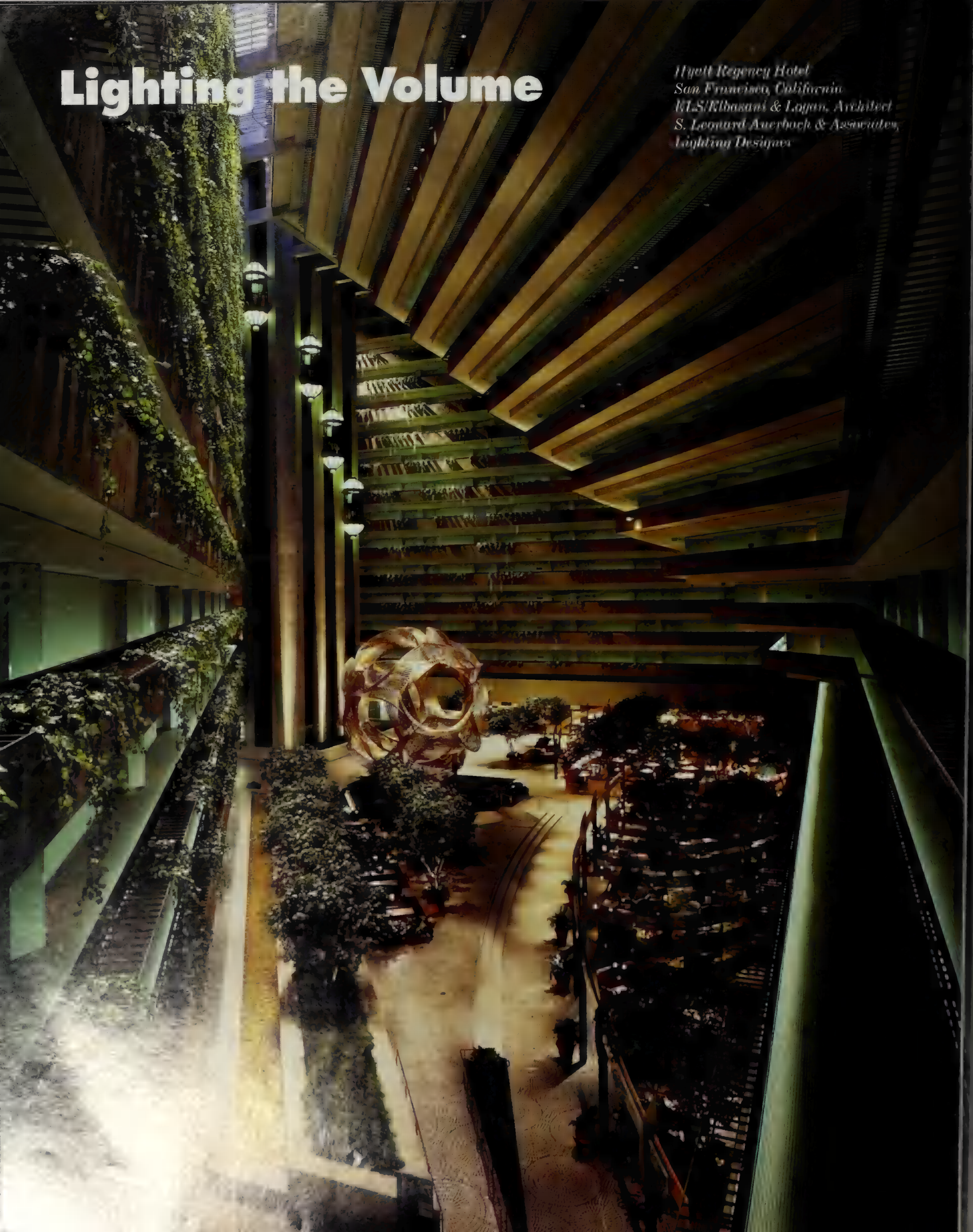
"...I looked at Mt. Fuji standing
loftily against the cloudless blue
sky and in that moment I resolved
a woman going to America,
depending on a husband she has
never seen, should have the noble
spirit of this majestic mountain."



Located in a landmark building where no new ceiling- or wall-mounted fixtures were permitted, the exhibit has been lit with the aid of cables connected to poles standing on a built-up floor. The cone-shaped fixtures use MR16 lamps with UV filters to protect the fragile artifacts.

Lighting the Volume

Hyatt Regency Hotel
San Francisco, California
ELS/Elbasani & Logan, Architect
S. Leonard Auerbach & Associates, Lighting Designer



he lighting was a huge part of the budget," says lighting designer Patty Glasow of S. Leonard Auerbach & Associates, "because the client and architect were aware of the importance of the lighting of this great volume of space, and how much could be accomplished with good lighting. "

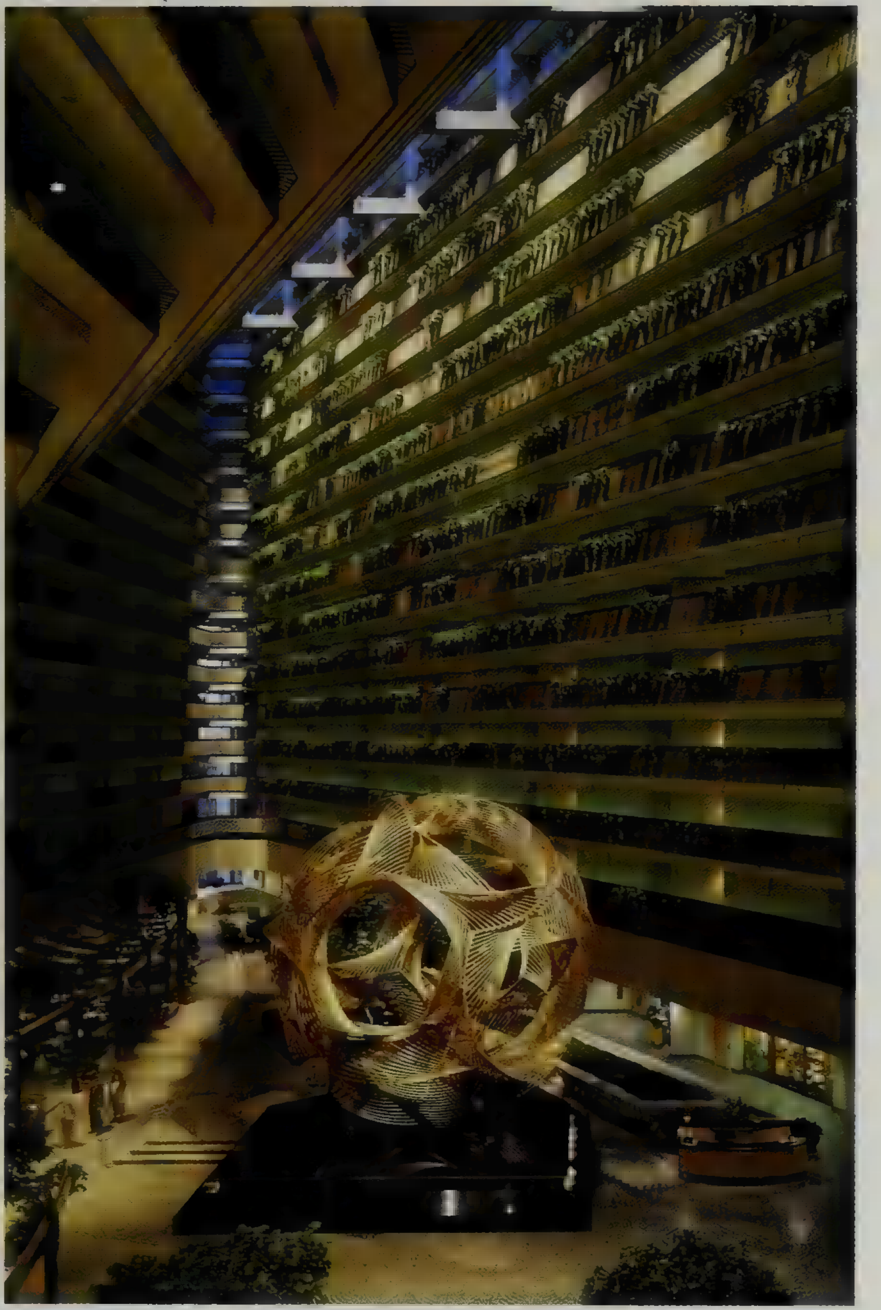
The volume to which Glasow refers is the lobby court of John Portman's Hyatt Regency Hotel in San Francisco, a 17-story ziggurat shaped space, which was recently gutted and remodeled with a new restaurant, bar, and registration and concierge desks. And according to Glasow, a lot of light was needed. "The first thing the lighting design team noticed was that it was pitch black in there," says Glasow.

Using standard- and low-voltage incandescent luminaires, the designers set out to wash the walls of the lobby court with light. "The way we did that was to use the existing trellis that runs around each balcony floor to clamp a single-point hanging adjustable fixture. The PAR64 spot was the lamp of choice, the 120-watt version was really the only thing that would shoot 170 feet to light the trees, pathways, and sculpture, and this is supplemented by standard-voltage 1000-watt PAR64 spots and medium floods. We also wanted to light the vertical surfaces, and for this we took our cue from the daylighting. What it does in the space is wonderful, but it does it for a very short period of the day, or not at all if it's cloudy.

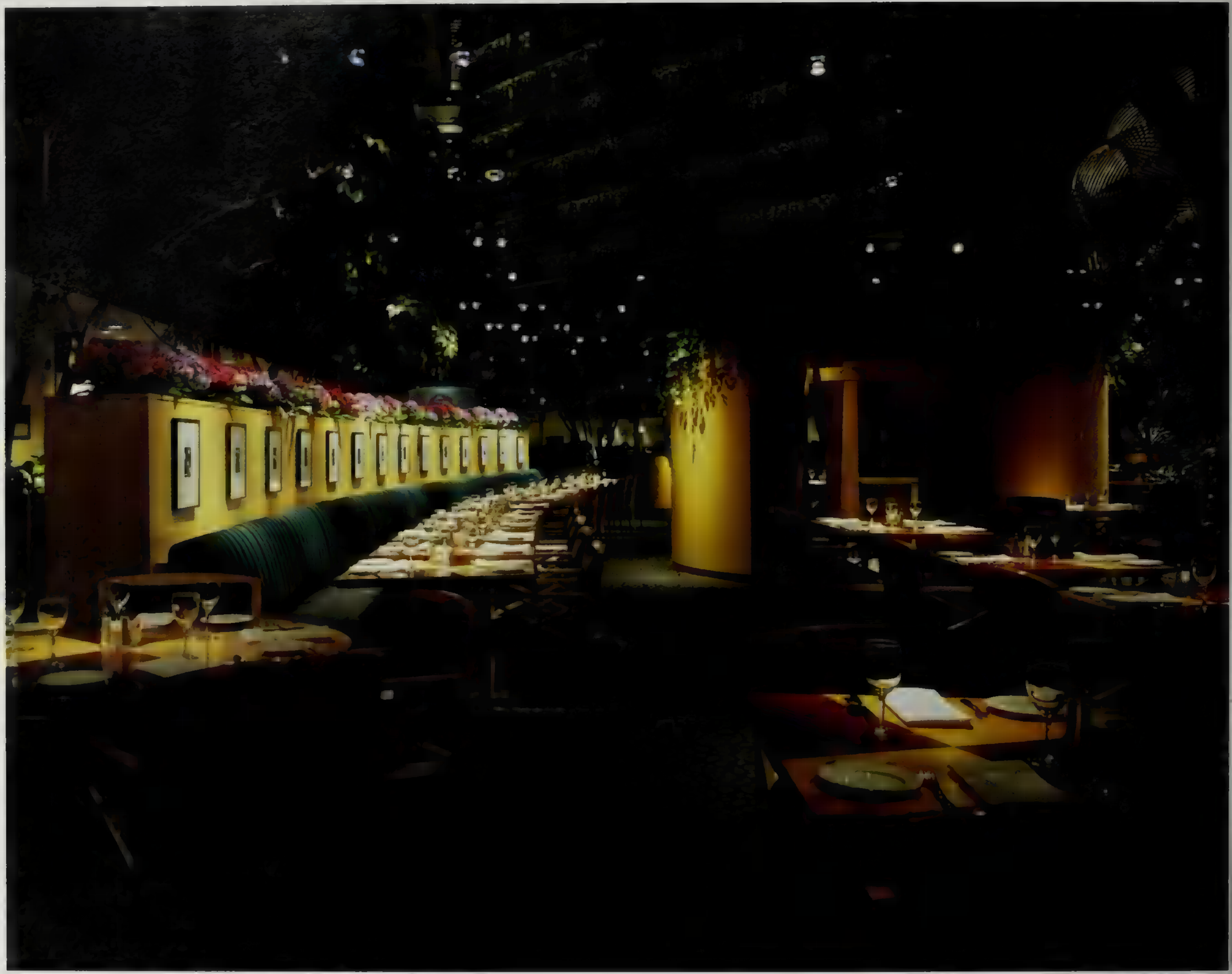
"We loved the way it raked across the foliage and the planter boxes. But instead of trying to simulate daylight directly, we took a more loose approach, not trying to calculate sun angles, but still trying to make it look like sunlight." Light from the low-voltage PAR64 narrow spots and medium floods hits the west wall (photo right and drawing on following spread) in parallel rays, striking the vines at the edge of the balconies. "We didn't have the fixture mounting locations on the west wall, so the fixtures kind of splay out in a fan pattern. To light the undersides of the balconies, Glasow used 42-watt narrow spot, and 50-watt MR16 spot uplights. These are fed by an open-conductor electric-wire system. This closely resembles the systems that were used to light the restaurant and bar.

The lighting for all of the areas was confirmed by full-scale mockups. "That was very important," says Glasow. "And when everyone said, 'yes, this is great,' that was our final buy-in." To ease maintenance chores, the designers prepared a maintenance manual with directions for focusing the fixtures, all of which are maintainable from the balconies. The fixtures are dimmed automatically by a programmable astronomical computer, with six daily presets and manual override for special events. It is notable that this was a design-build project, and that solutions to design problems were sought by collaboration between the designers, contractor, and equipment manufacturers.
Charles Linn

© *John Sutton photos*

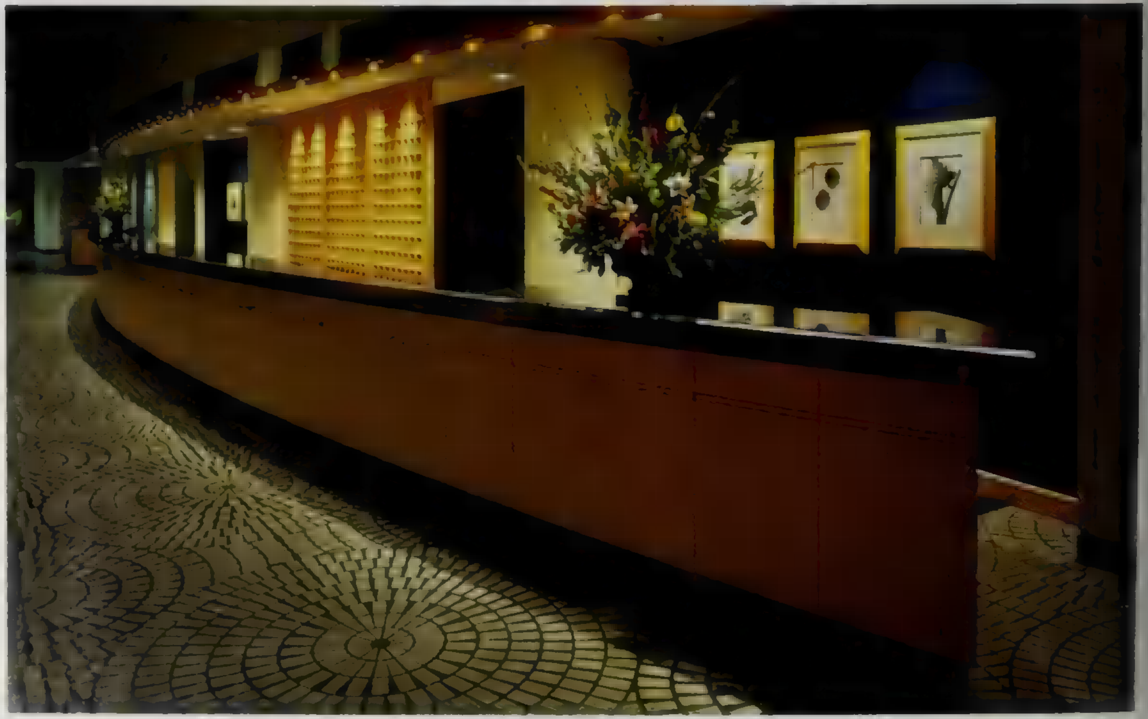


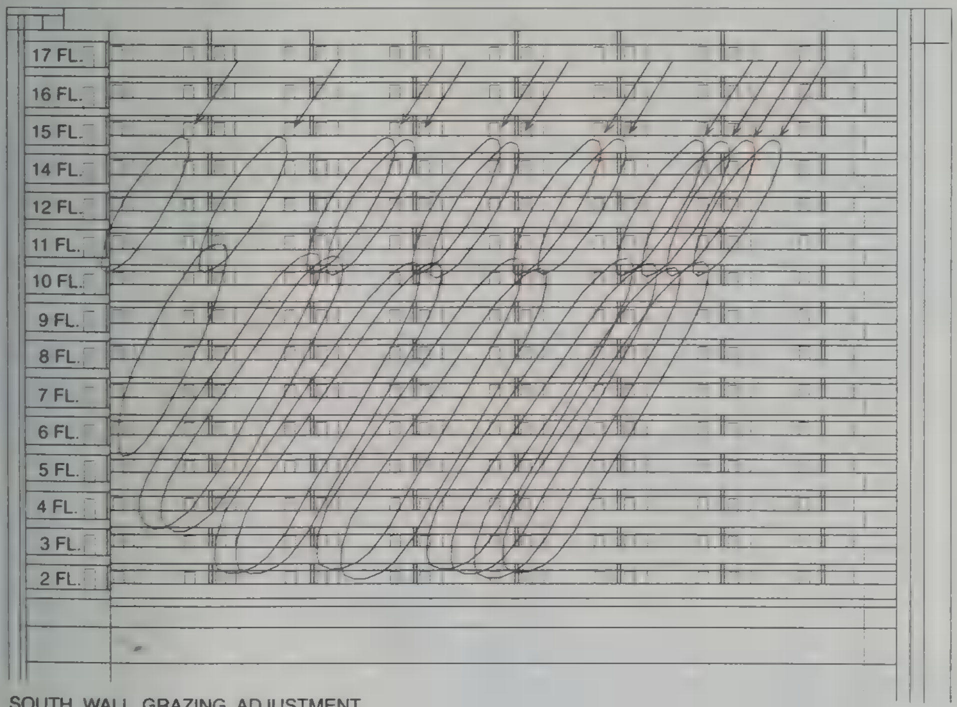
Standard- and low-voltage PAR 64 spotlights were used to illuminate the sculpture, walkways, and foliage in the Hyatt Regency's lobby court. Light grazing the south and west walls is intended to simulate the play of daylight off the vertical surfaces.



20-watt MR16 narrow-beam spots illuminate each table in the restaurant (above). They are powered by fixtures suspended from an open-conductor wire system. The lamps are dimmed using an astronomical dimming computer, with morning, afternoon, evening and night scenes. The lamps are run at full brightness in the morning to maintain the tungsten halogen cycle.

The registration desk (right) has a 60-foot long curved custom valence, fabricated of stainless steel and illuminated by MR11s. A [illegible] detail is repeated in the restaurant





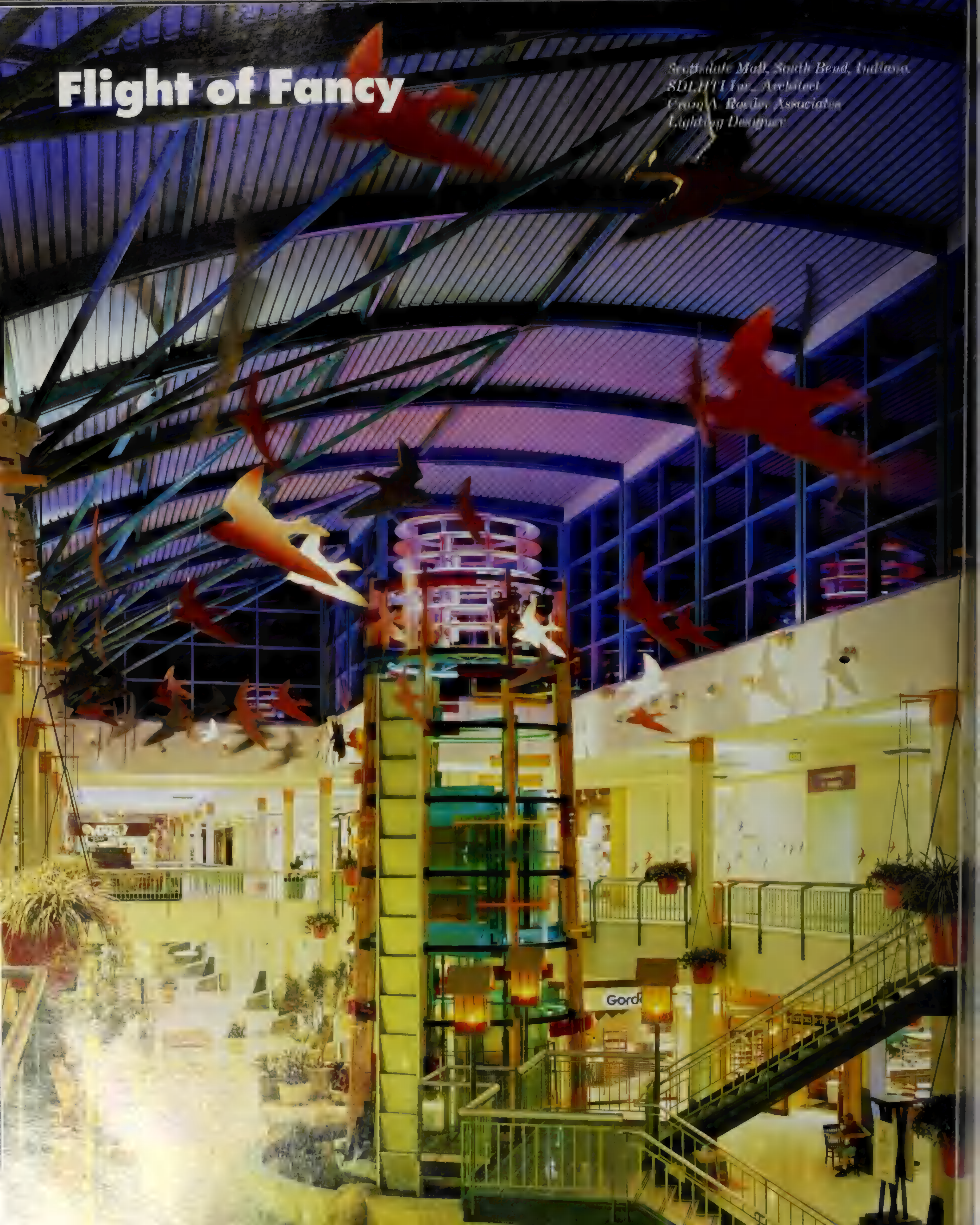
SOUTH WALL GRAZING ADJUSTMENT

The aiming diagram at left is from a page in the handbook Auerbach's office prepared for the hotel staff. It shows how the low-voltage PAR 64 lamps are to be aimed, to graze the west wall of the atrium. The intent is to simulate daylight flooding into the atrium from above.

Credits
Hyatt Regency Hotel
San Francisco
Owner: *David Rockefeller & Associates; Prudential Realty Group*
Architect: *ELS/Elbasani & Logan Architects*
Interior Designer: *Hirsch/Bedner & Associates*
Lighting Designer: *S. Leonard Auerbach + Associates—Len Auerbach and Patricia Glasow, design principals; Virva Kokkonen, lighting designer*
Contractor *Dinwiddie Construction*

Flight of Fancy

Scottsdale Mall, South Bend, Indiana
SDI-HTI Inc., Architect
Craig A. Roeder Associates
Lighting Designer



ith its flying birds, banners, elevator fountain, and pools of water layered with washes of light and color, the Scottsdale Mall in South Bend, Indiana, could be construed as a village square for the 1990s—a festoon of fantasy for the entire family between shopping for shirts and vacuum cleaners. The renovation of the existing mall by the Cincinnati-based architecture firm of SDI.HTI included architectural elements such as clerestories, a vaulted roof, as well as fanciful, decorative additions such as graphic birds suspended from the ceiling by invisible nylon cables, and a "fountain" elevator that is located at the center of a pool. These, working in conjunction with the creative layering and the vibrant, changing colors of Craig Roeder's lighting design, have helped turn the two-story mall into an exciting and stimulating space.

The Dallas-based Roeder, who firmly believes in the therapeutic powers of light and color, and sees his work as his "highest form of play," set out to create an eye-catching place that was also energy efficient. The mall was designed around the theme of bringing the outdoors indoors. Working in complement with this idea, the lighting accentuates the tree-like verticality of the columns and elevator shaft with uplights. For each of the columns, a 175-watt, metal-halide lamp fitted with a dicroic color filter is housed in a barrel-like recess. A second clear glass panel, six inches above, serves to trap heat within the cavity and to make the floor level lamp safe for passing contact.

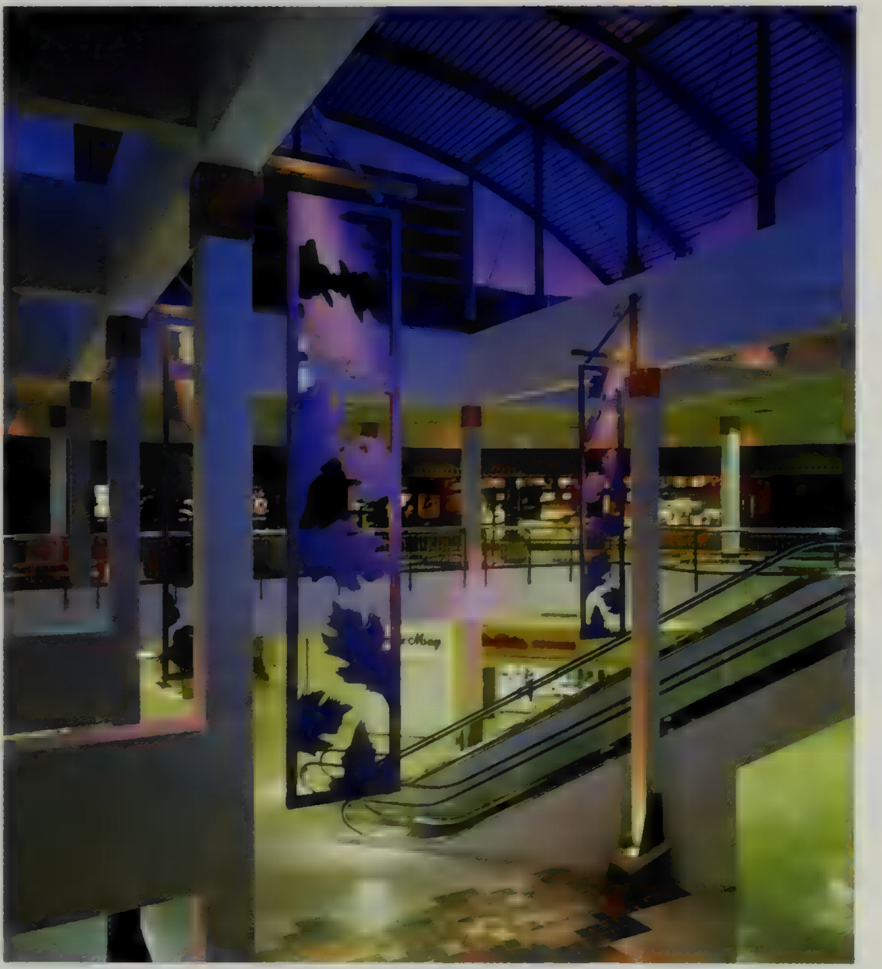
A pivotal design element in the space is a brightly lit elevator shaft from which water cascades into a pool. Twenty-four 10-degree quartz spots with dicroic color filters in clusters of four in the semi-circular pool surrounding the elevator work on a four-circuit cross-fader that moves from blue to magenta to turquoise to white. Topped off by a halo of rings of neon, the elevator shaft, which connects floor to ceiling or, to be more fanciful, earth to sky) works as a free-standing sculpture in the mall's central court.

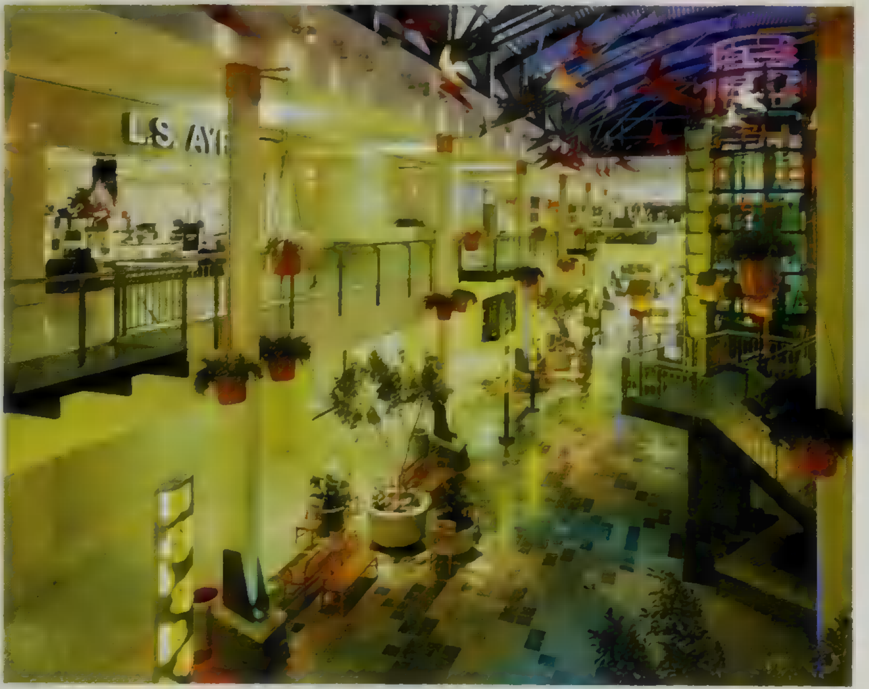
At ceiling level, hidden 3-degree PAR64 metal-halide spots create cross lighting that gives definition and depth to the graphic birds, while ceiling coves are washed in a "heavenly" light with the help of metal halide and neon fixtures fitted with dicroic color filters. Signage and banners are lit by a 3,000K 150-watt metal-halide lamps, which produce the warmth of incandescent but are more energy efficient. The mall's quiet space, the 15 to 25 feet between storefronts and the center of the atria, is lit by 3,500K biaxal fluorescents lamps that bring 20 footcandles to the floor.

The lighting changes dramatically from day to night. In the daytime, clerestories bring sunlight into the space, and so the coves are lit with complementary white lights, which turn into purple, and powder blue, with a kiss of magenta at night. "We save energy and create a changing panorama for shoppers," says Roeder. *Nayana Currimbhoy*

Credits
Scottsdale Mall
South Bend, Indiana
Owner: *Massachusetts Mutual Life Insurance Company*
Architect: *SDI.HTI Inc., Cincinnati, Ohio*
Lighting Designer: *Craig A. Roeder Associates—Craig A. Roeder and Robert Oakes, design team*
General Contractor: *McDevitt Street Bovis*

© Robert Ames Cook photos





In the pool surrounding the elevator shaft, 10-degree quartz spots mounted with dicroic color filters work on a four-circuit cross-fader so that the fountain and shaft change from blue to magenta to turquoise to white. Signage and banners are bathed in the warm glow of 150-watt, 3,000 kelvin metal halide while the birds, suspended from the ceiling with invisible nylon cables, are given definition and shadow with the help of hidden luminaires behind trusses and bird houses built to entice the imaginary birds.

Manufacturer Sources

For your convenience in locating fixtures and other lighting products shown in feature articles, RECORD has asked the architects and lighting designers to identify their sources.

Pages 24-25

Japanese American National Museum
Jim Mcelwain, Restoration Architect
Hiram Banks and Susan Huey, Lighting Integration Technology, Inc., Lighting Designers

Custom fixtures: Neidhardt Design. Underbalcony track system: Lighting Services, Inc. Lamps (Low-voltage and CFL): General Electric Lighting. Lighting control system: Strand.

Pages 26-29

Hyatt Regency San Francisco
ELS/Elbasani & Logan Architects
S. Leonard Auerbach + Associates, Lighting Designer

Atrium low- and line-voltage PAR64 adjustable spots: Lighting Services, Inc. Recessed adjustable and fixed MR16 downlights: Prescolite/USI Lighting. Other downlights: Kurt Versen, Inc. Cable-hung low-voltage lights: Translite. Tree-mounted uplights, surface-mounted MR16 downlights (in custom fixtures): B-K Lighting. MR16 pendants: Leucos Lighting. Registration desk and bar pendants: Shaper Lighting (custom by lighting designers). PAR lamps: Osram/Sylvania Inc. MR16 sources: General Electric Lighting (Constant Color). Lighting control system: Lutron Electric Co., Inc. (Orion).

Pages 30-31

Scottsdale Mall, South Bend, Indiana
SDI. HTI, Architect
Craig A. Roeder, Lighting Designer

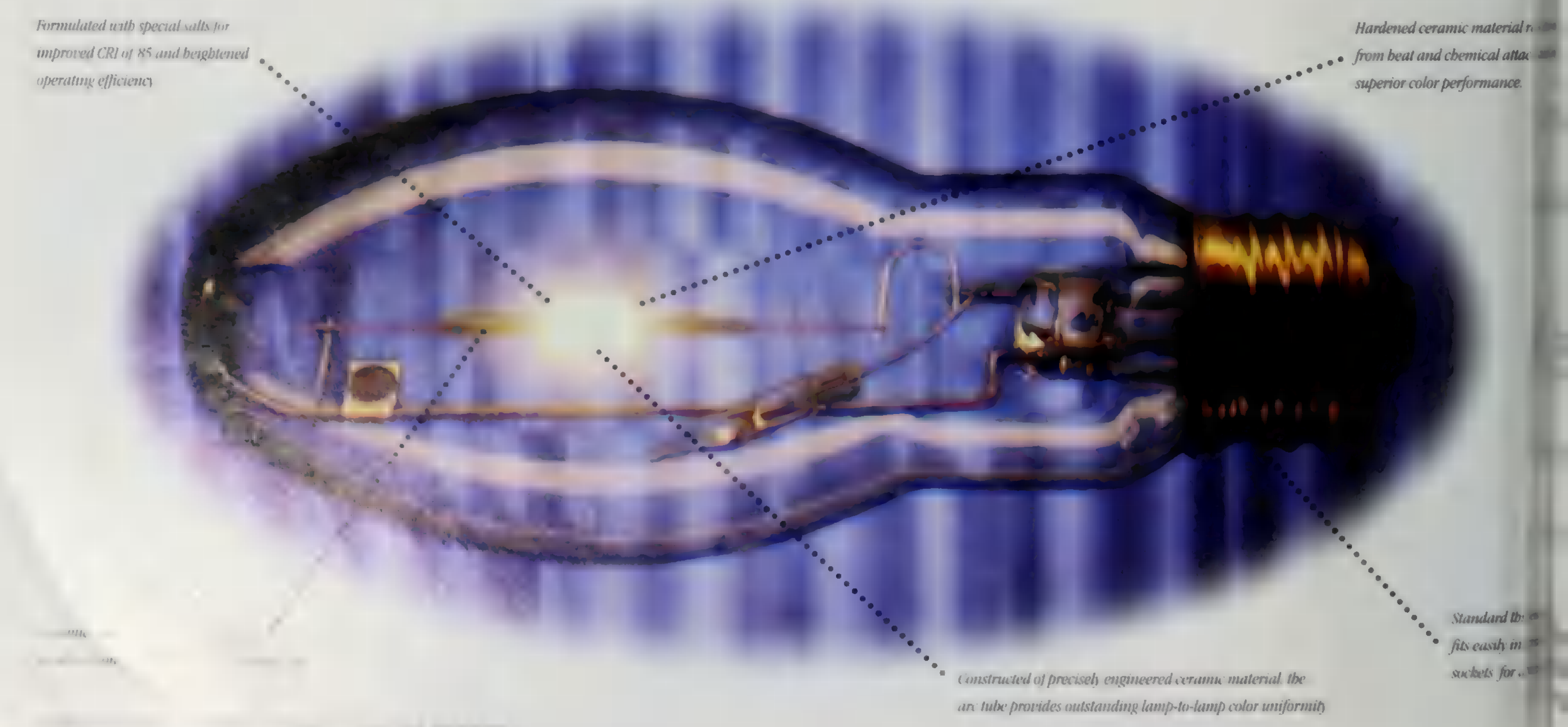
Accent-lighting fixtures: LiteLab, Inc. Floor-mounted uplights and fountain lighting: Hydrel. Pendants: Winona Lighting (custom). Clerestory fixtures: Hubbel Lighting. Neon: North American Signs.

New Products

329. ADA-compliant signaling strobes
New SS12/24ADA alarms have a special lens/reflector that is said to assure the proper horizontal and vertical 180-deg polar light distribution required by recently published UL 1971 standards for public-mode fire alarms. Housings may be red or beige; light intensities range up to 110cd. Sounders also available. System Sensor, St. Charles, Ill.

Continued on page 38

INSTEAD OF TINKERING WITH CURRENT M



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superior color performance.
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Standard th
fits easily in
sockets for

Street Lighting *continued from page 14*
favoring reflector design, completely concealing the point source from the field of view.at normal viewing angles. Higher output also allowed pole spacing to increase although this also meant higher poles. Research revealed that people could see a uniformly lit pavement surface better if the light source were shielded from view, minimizing direct glare. This further reinforced the trend toward reflector optics with concealed, increasingly bright sources. HPS's high efficacy outweighed objections to its rather poor color rendering, and eventually it was adopted as the de facto utility-company standard for street lighting.

During the last 10 years, utility companies have replaced a good deal of the street and highway lighting in the U.S. But the only hardware options they offered were the flat-lens-cutoff cobrahead, and the drop-dish cobrahead. For communities and lighting designers, it is a choice between two evils. Dropped-dish cobraheads create unacceptable glare; flat-lens cobraheads create bright pools of light and almost total darkness between fixtures, especially when bracket-mounted low onto wooden utility poles. The source is completely invisible beyond the cutoff angle of the luminaire. It is no surprise that people in communities besides Lexington have vigorously opposed the change to high-pressure sodium cobraheads.

An indirect approach

During this period, research at Pennsylvania State University revealed that the perception of the light level in a space was affected by whether or not the luminaire lighting the space contained a "bright element." Subjects were asked to judge the illumination level in a room lit by a shielded fluorescent uplight, and the illumination level in the same room with a similar uplight containing a small lens that refracted a bit of light into their eyes. Though the measured light level was the same for both fixture types, subjects judged the lighting level to be higher when illuminated by the fixture with the small lens—a "bright element"—attached.

So far, no one has made the conceptual leap connecting the interior indirect-lighting research with the perception that streets illuminated with "cutoff" street luminaires are dim and gloomy, even when sprayed with lots of light. The analogy is obvious: gas and incandescent luminaires, though not as bright, were visible from far away, and gave people a sense of the light and awareness of the source. It was seen as safe, friendly, and adequate, despite very low average and maximum light levels, and poor uniformity. HPS street-lighting installations, with their powerful sources fully shielded, fail to create as successful a nighttime environment as their low-powered, unshielded predecessors.

To test the theory, the Lexington project will test a number of cutoff luminaires that have been fitted with special refractor elements to reintroduce the effect of an apparent source.. If the theory is correct, streets lit with these luminaires will be perceived as being brighter—and thus more pleasantly lit—than the unmodified cutoff fixtures. If true, it opens up the possibility that there can be energy conservation based on perception-oriented design rather than using high efficacy but poor color-rendering sources to blast pools of light onto the pavement. And it may even be possible to reduce light levels without decreasing user satisfaction. The design of a new type of street-lighting luminaire may very well be the opportunity of the 1990s for lighting manufacturers. ■

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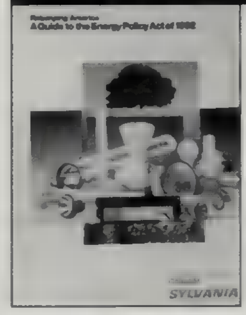
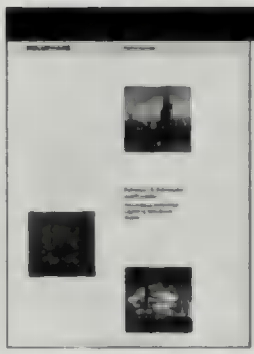
Product Literature/Lighting

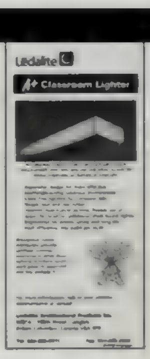


418. Energy Policy Act Guide
Explains how the energy-saving strategies adopted by Congress with 1992's EPACT affects lamp availability by prohibiting standard T12s and many incandescent reflector lamps, and describes what new performance certifications will tell the specifier. Stresses the money-saving advantages of "maximum" compliance. Osram/Sylvania, Danvers, Mass.

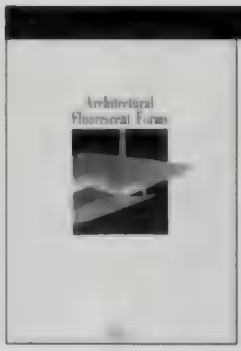
419. Landscape luminaires
A 12-page Product Showcase features new landscape-lighting fixtures made of corrosion-resistant cast bronze, such as floodlights, bollards, pathway and step lighting, accent spots, bricklights, and below-grade uplights. Displays photometric, lamping, and dimensional data. Bronzelite, San Marcos, Texas.



420. In-plant lighting
A 32-page booklet, "Hazardous Industrial Lighting Solutions Guide," demonstrates how Petro-Series luminaires ensure optimum light distributions, safe and reliable performance, and economical operation in Class I, Class II, and Class III locations. Holophane Lighting, Inc., Newark, Ohio. *



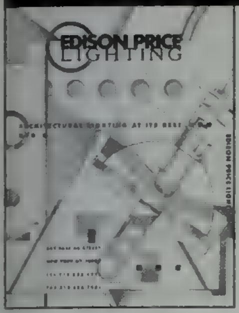
421. Illuminating schoolrooms
A linear-fluorescent designed for schools, the A+ Classroom Lighter distributes both direct, sharp-cutoff downlighting and indirect, ambient illumination of ceilings and walls. A Variable Optic option lets the designer tune direct-light output to suit various desk-top tasks, from sewing to computer work. Ledalite Architectural Products, Inc., Langley, B.C.



422. Computer-task lighting
Braced with rugged Danish names like Skagen and Viborg, direct- and direct/indirect linear fluorescent pendants are said to meet a range of illumination requirements demanded by VDT-intensive tasks. A colorful catalog supplies dimensions, beam spreads, and louver and finish options. Louis Poulsen, Miami.

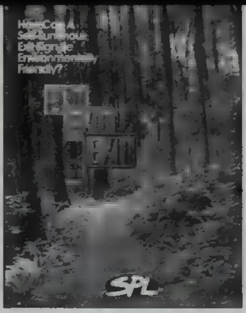
423. Complete product line
Lightolier's 1995 Comprehensive Selection Guide contains seven lighting categories, covering lines such as Lytecaster and Calculite downlighting, Lytespan track, decorative fixtures, architectural fluorescents, controls and dimming systems, and project-management software. Lightolier, Inc., Secaucus, N.J. *

** Product Data on CAD disk*
For more information, circle item numbers on Reader Service Card.



424. Museum track lighting

A designer's kit on the SightLine system includes photos of the exhibit lighting installed in galleries, homes, and stores, and lists some of the 250 museums where the lights are in use. Catalog pages give dimensional, mounting, lamping, and photometric data for all styles of track, fixtures, and connectors. Edison-Price Lighting, New York City. *

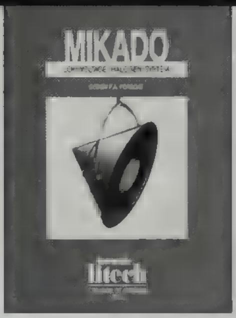


425. Self-powered exits

A color brochure explains how self-luminous exit signs can be environmentally friendly. The devices need no batteries, electricity, or bulbs, and a closed-loop recycling program captures tritium gas from spent units (after 20+ years of zero-maintenance life). Other products: emergency lighting and LED signs. Self-Powered Lighting, Elmsford, N.Y.

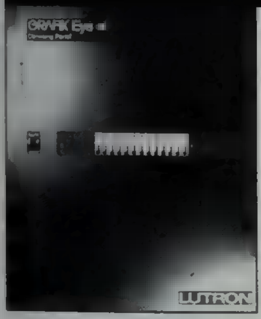
426. Period-style luminaires

Described as a high-performance version of the classic "acorn" post-top, Promenade fixtures use reflec -tors said to insure even light levels. Lenses are glass or non-yellowing acrylic; four styles available. A colorful 12-page catalog includes on-site photos and lamping, finish-option, and photometric data. Architectural Area Lighting, La Mirada, Calif.



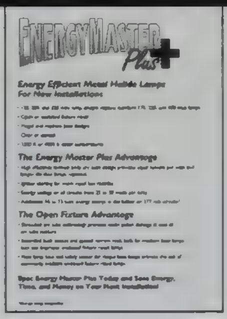
427. High-style accents

A 16-page brochure specifically on the Mikado spotlighting system illustrates the cone-shaped fixture used in track-, wall-, and ceiling-mount applications. Drawings suggest fixture placement in various retail, office, and residential environments; complete lamping, transformer, dimensional, and accessory data included. Artemide, Inc., Farmingdale, N.Y.



428. Field-adaptable dimming

A brochure describes a digitally controlled dimming panel, part of the Grafik Eye line. Made up of integral plug-in dimmer cards (each handles any type source), the modular panel is easy to install, and permits design changes in the field without re-engineering. Panels come pre-wired with 6 to 48 circuits, from 100 to 277 volts. Lutron Electronics, Coopersburg, Pa.


EnergyMaster Plus
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The Energy Master Plus Advantage
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429. Metal-halide lamp system

Booklet on the Energy Master Plus metal halide stresses the lamp's energy-saving potential over standard universal lamps, and explains a lamp/ballast system said to operate these lamps on all common input voltages found in North America. Offered in medium and mogul base. Venture Lighting, Solon, Ohio.

Continued on page 36

* *Product Data on CAD disk*

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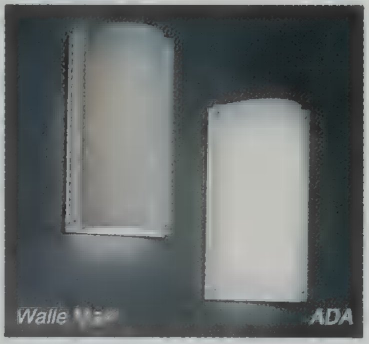
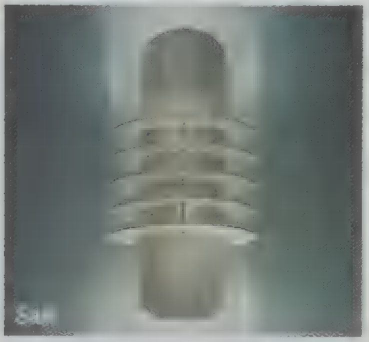
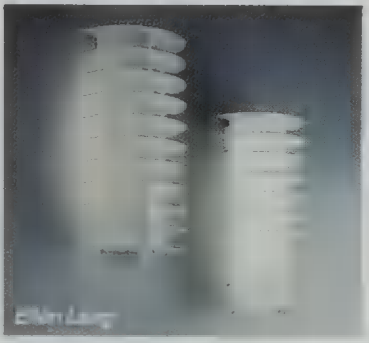
Northern Lights







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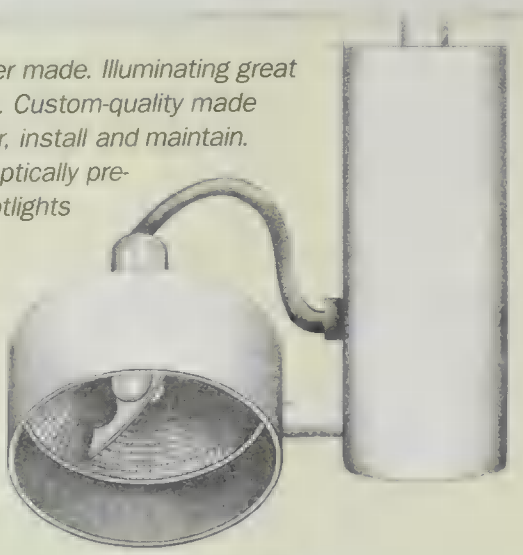

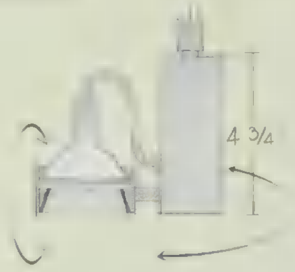

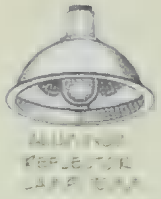

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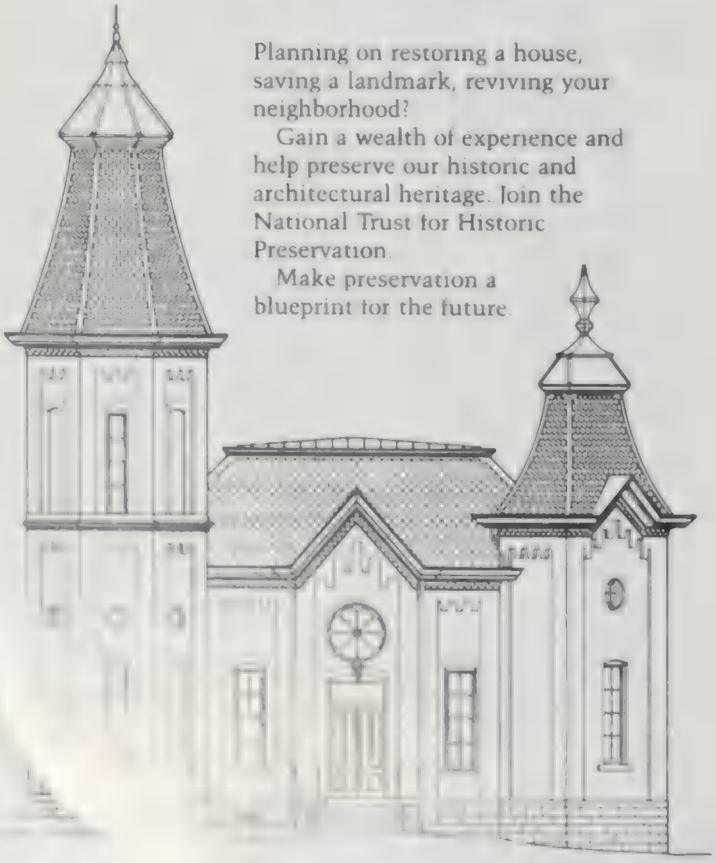
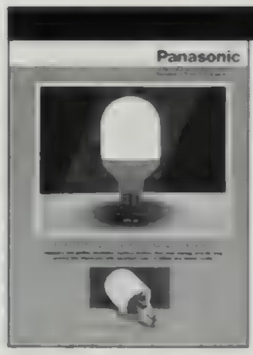


National Trust for Historic Preservation
Department PA
[illegible] Massachusetts Ave., N.W.

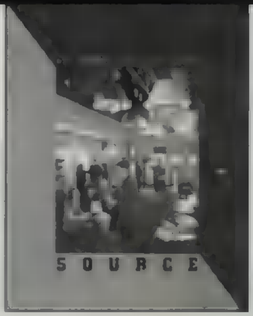
Product Literature/Lighting

430. ADA wall fixtures
A 24-page color catalog illustrates low-profile "Energy Smart" wall and corridor luminaires. Outlines ADA requirements for maximum protrusions, fixture heights, and placement in public-access areas indoors and out, and gives photometric, electrical, and finish data for all compliant products. 800/217-7722 (E), 800/223-0726 (W). Lightolier, Inc., Secaucus, N.J.*

431. Fiber-optic signage
The Addralite system uses fiber-optic elements to illuminate etched-plate-glass signage, shelving, and artwork. Multiple units can be lit from one source, with a choice of colors, changing colors, and other special lighting effects. Glass (or Plexiglass, where required) signs offer different standard graphics and mountings. Glass Illuminations, Inc. Sun Valley, Calif.

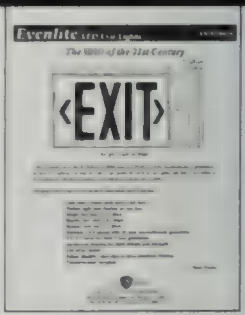


432. Electronic "light capsule"
A spec sheet describes the 20W model Low Profile (6 1/2-in.) CFL bulb, said to produce 1,100 lumens with a CRI of 84-88 in color options of 2800K and 5000K, very comparable to its 75W incandescent "competition." It also consumes 70 percent less energy, and is rated to last 10 times longer: 10,000 hours. Panasonic Lighting, Secaucus, N.J.



433. Lighting education
A folio gives scheduling and curriculum information on classes at SOURCE, Cooper Lighting's educational and training facility near Chicago. Topics include lighting fundamentals, interior lighting, exterior and roadway illumination, software design; shorter seminars cover specific light sources. 708/956-8400. Cooper Lighting, Elk Grove Village, Ill. *

434. Extreme-condition lighting
A catalog on High Abuse lighting presents a line of steel or aluminum fixtures for high-risk areas: schools, parks and sports facilities, apartment complexes, train and bus stations, parking garages, and government buildings. Sources include incandescent, fluorescent, and HID; all lenses are UV-stabilized polycarbonate. Lithonia Lighting, Conyers, Ga.



435. LED exits
Catalog pages describe Century series exits, available in either diecast aluminum or 1 1/4-in.-thick thermoplastic housings. An indirect, 20-year-life light source is said to illuminate both single- and double-face models evenly, with no hot spots, glitter, or shadows. Evenlite, Inc., Grasonville, Md. ■

* *Product Data on CAD disk*

For more information, circle item numbers on Reader Service Card

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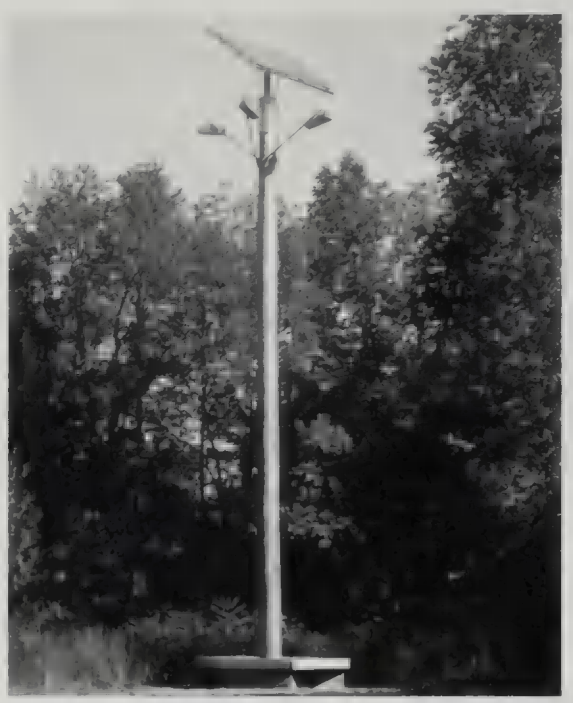
Clockwise from upper left: ZXST, ZXRC, ZXC, ZXSRW. For further information and the name of your local sales representative, Please contact us at: Zumtobel Staff Lighting, Inc. 141 Lanza Ave., Bldg. 16D, Garfield, NJ 07026. Ph 201 340-8900. Fax 201 340-9898.

New Products *continued from page 32*

330. Dual-load automatic control. A new motion sensor for ceilings or high walls, Tork's SC20 controls fluorescent and incandescent lighting systems as well as hvac equipment, including fans. Coverage, up to 2,000 sq ft, can be fine-tuned to a particular space. Timer adjusts from 30 seconds to 15 minutes. Tork, Mount Vernon, N.Y.



331. Solar-powered high-mast light. Elise Geiger, a recent graduate of the Yale School of Architecture, calls the off-grid, solar-powered light assembly she designed with the Parks Department of North Branford, Conn., a "solar tree." The rugged luminaire was built to illuminate pathways leading to sports playing fields used by youth leagues well into the evening three seasons a year. Three Magna Ray 12-volt, 2900-lumen fluorescent flood lights, one aimed towards each walkway, are powered by Siemens photovoltaic panels, set at the top of—but visually separated from—the 30-ft-high wood pole. Fixed at a 45-deg angle facing south, the panels look like a giant sunflower. Deep-cycle batteries for power storage fit under the rustic circular wood seat that forms the the base of the light. Sunsearch, Inc., North Branford, Conn.

332. Dimming-ballast control. The LightSaver LS-30 interfaces directly with either Advance Mark VII or Motorola Helios 32 electronic dimming ballasts to maintain interior-light levels at a preset level, based on its measurement of ambient daylight and task illumination present. The Watt Stopper, Inc., Santa Clara, Calif.

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First came the plain undercabinet light. Then the slimmed-d versions. So useful, you specified them by the row! Problem lamping options were limited...and linking units was a tedious and untidy hardwiring headache. **Enter the LINCS era.** Now go ahead, plug a dimmable halogen accent module into a matching fluorescent module, then into a

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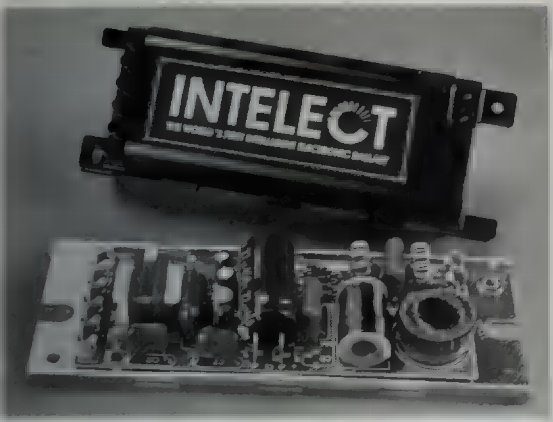
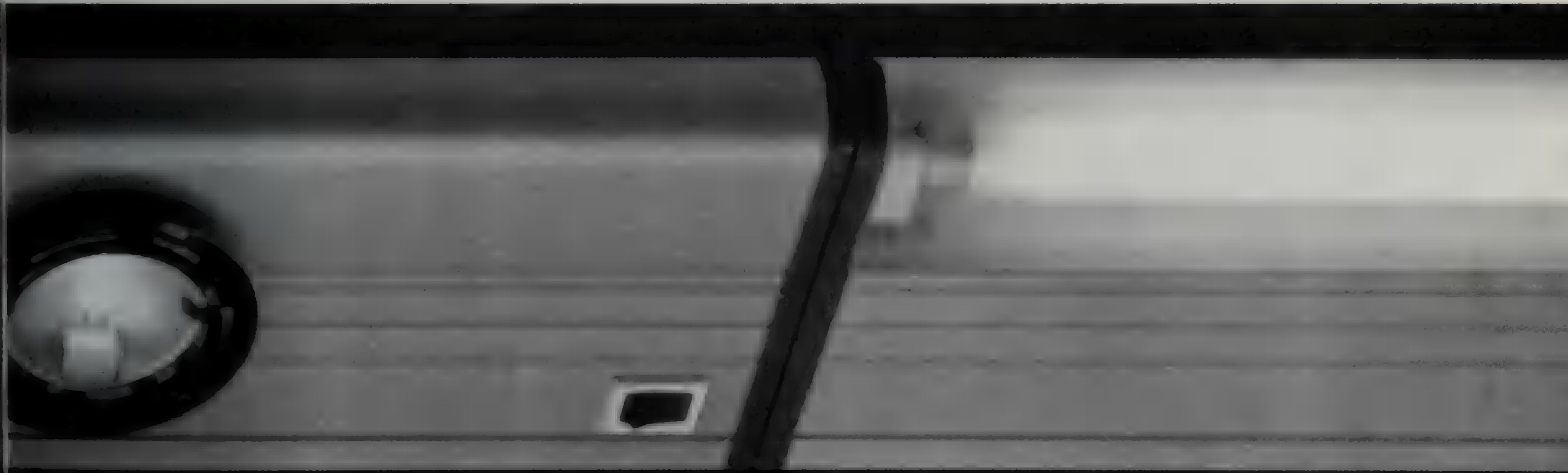


333. Smaller and cheaper
Prescolite's Intelect system dims 13W, 18W, nd 26W compact-fluorescent lamps using a ew circuitry design said to compensate for ariations in lamp performance and to perate without flicker from 100-percent to 5-percent light output. Lamp start is escribed as soft and sequenced; ballast perates at a high power factor (over 90 ercent) with low (less than 10 percent) total armonic distortion. The Intelect's circuitry mprovements are said to bring down both he price and the size of CFL dimming ystems. Prescolite/USI, San Leandro, Calif.

334. Sports-lighting system
The Hanglite fixture was developed for energy-efficient lighting that met the high-visibility requirements of racquet sports, and also to be light enough, at only 12 lbs, to hang from air-supported structures without needing hazardous poles or ceiling rods. Each luminaire holds a 1000W metal-halide bulb in its most-efficient vertical burn position, and bounces light off the reflective surfaces of fabric or fiberglass-lined buildings to provide even, no-glare illumination. Fixtures will not damage—or be damaged—by inadvertent or seasonal deflation of the air structure. A tennis bubble is shown; other applications include an indoor practice facility for the N.Y. Giants. DAFT Electric, Mamaroneck, N.Y.

continued on page 40



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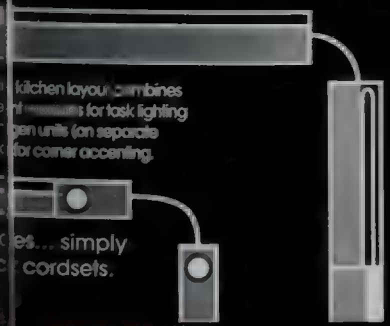

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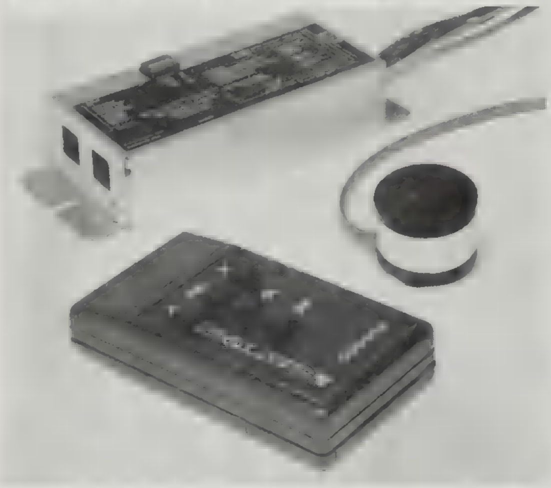
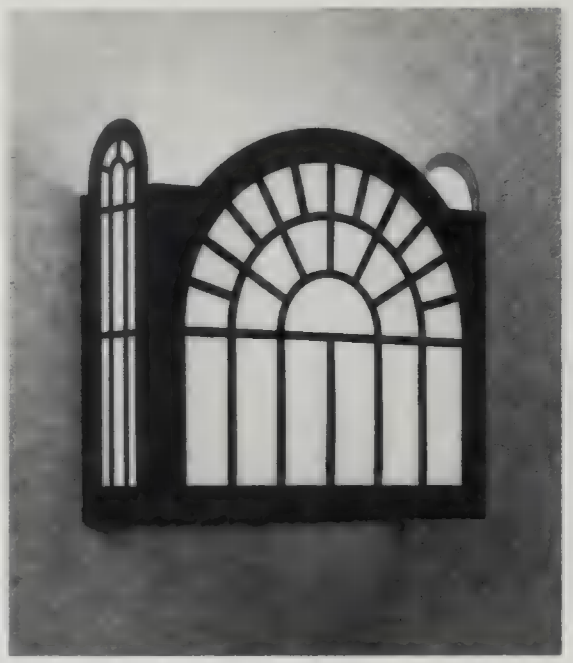
New Products *continued from page 39*



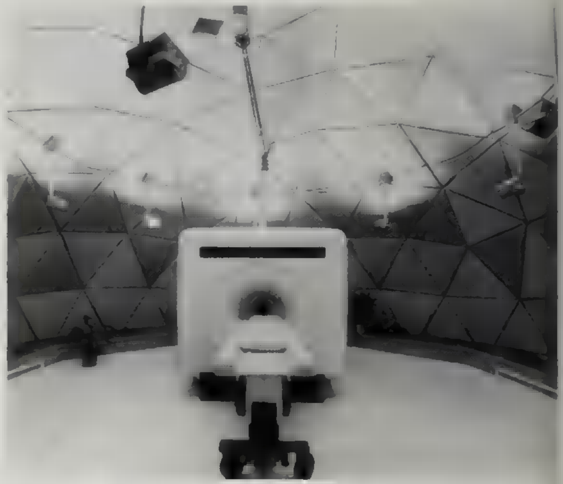
335. Local fluorescent controller

A three-component system, Sector provides remote control of individual fluorescent dimmable ballasts within large, multi-task office space applications. The system permits workers to adjust their own lighting levels using a remote controller (foreground), operable within a 30-ft range. Sector components are said to be easy to retrofit into existing building wiring. The unobtrusive infrared receiver (middle) may be mounted on T-bars, walls, louvers, or flush into ceiling tiles; ballast controller mounts in the fixture trough. Colortran, Burbank, Calif.



336. ADA-compliant sconce

Manning's DS-119A, resembling a Palladian window or a church nave, is one of 32 designs in the company's new wall-light line. For incandescent or fluorescent lamping with an open top and luminous bottom, the unit is 12-in. high and projects an ADA-compliant 4 in. Fixtures are made of aluminum or steel; acrylic lens. R.A. Manning, Sheboygan, Wis.



337. Lighting for MRI facilities

Elliptipar offers several luminaires that meet the unique illumination problems of MRI diagnostic-imaging sites. Using only incandescent sources that do not produce radio frequencies at a level high enough to interfere with the equipment itself, ceiling- and wall-wash fixtures provide indirect lighting for greater patient comfort, are non-magnetic, and operate on direct current for long lamp life. Also, a modified Ensconce fixture is available for use in custom-designed enclosures. Elliptipar, Inc., West Haven, Conn.

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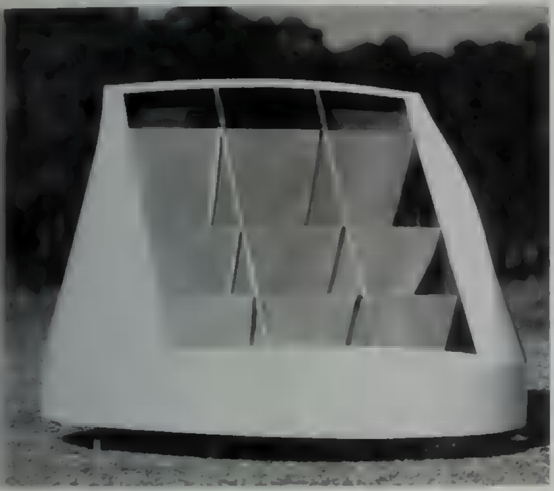
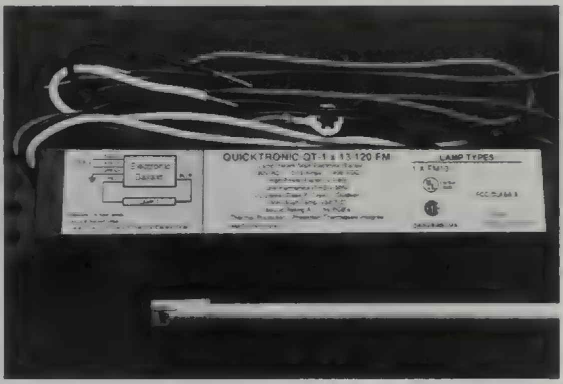


338. Sun-tracking skylights
The solar-powered SunSeeker follows the sun from sunrise to sunset, capturing and distributing sunlight to interior spaces and reducing both lighting and cooling loads. It automatically returns to face east at dark, ready for the next dawn. Made mainly of molded fiberglass, system components include a PV-powered rotating tracker (photo) which contains light-reflecting mirrors; a base plate that forms the through-roof curb; and an nsulator box and light shaft, which absorbs heat while diffusing sunlight. 407/768-6238. LightScience Corp., Indialantic, Fla.



339. Subminiature fluorescent lamps
A series of pencil-sized fluorescent lamps, from 8 to 20 inches long and from 6W to 13W, can be used in new lighting fixtures and applications where small size and good lumen output are desired. These might include low-profile task lighting, backlighting of LCD displays, and showcase lighting. Lamps have a CRI of 80, and have been designed to work with matching electronic ballasts that optimize their performance. With a rated lamp life of 10,000 hours and a light output of 310-, 500-, 680-, and 860-lumens, tiny fluorescents last longer and burn as bright as T5 lamps that are twice the size. Osram Sylvania, Inc., Danvers, Mass.

340. Outdoor architectural sconces
A new mcPhilben luminaire style, the 100 Line includes these wedge shapes intended for both down- and up-lighting applications that demand strict control of glare and light trespass. Optical systems permit wide fixture spacings, and can be specified for either wide or forward-throw distributions using HID lamps up to 175W. Thomas Outdoor Lighting, San Leandro, Calif. ■

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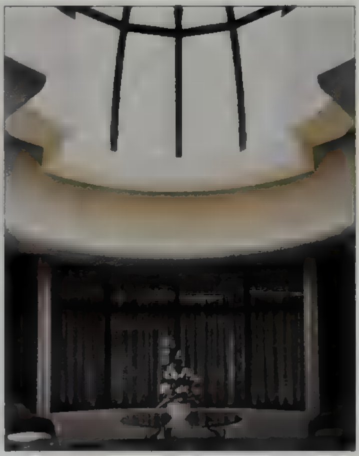

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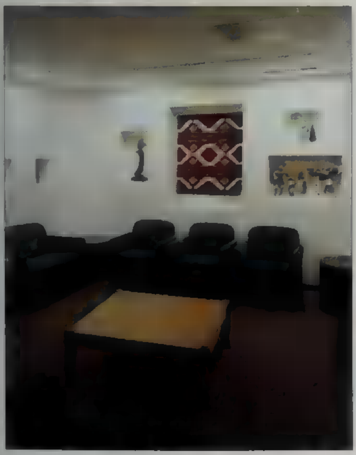

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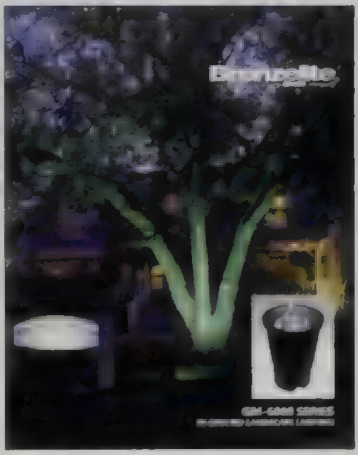

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Electric Trees

This brochure introduces Electric Trees, a creation of neon artist Eric Zimmerman. Each Electric Tree is an original neon sculpture whose elements may be adapted to the needs of specific projects. THe neon cluster is mounted atop a carefully detailed off-the-shelf modular structure called a Power Trunk which conceals the electrical components. Electric Trees are designed for use in shopping malls, airports, important lobbies, exterior building entrances, etc. This brochure illustrates several design possibilities in full-color and provides some introductory technical data. For further information call (213) 581-8800.

Zimmerman Neon Studios

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In Grade Up Lights

This 36 page catalog covers the new, innovative 9000 Series Ingrade Lighting fixtures. See how modular design makes a difference in performance, installation, maintenance, and durability. Available in a variety of configurations, this series accepts lamps to 175W HID, 250W incandescent. Architectural and landscape illustrations include recommendations for the most common applications. Hydrel, Sylmar, California.

Hydrel

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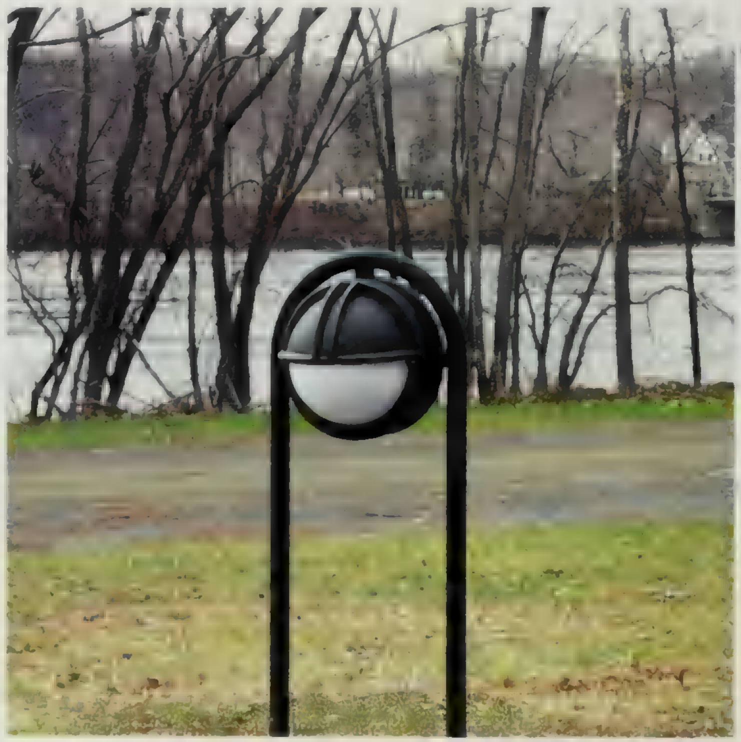
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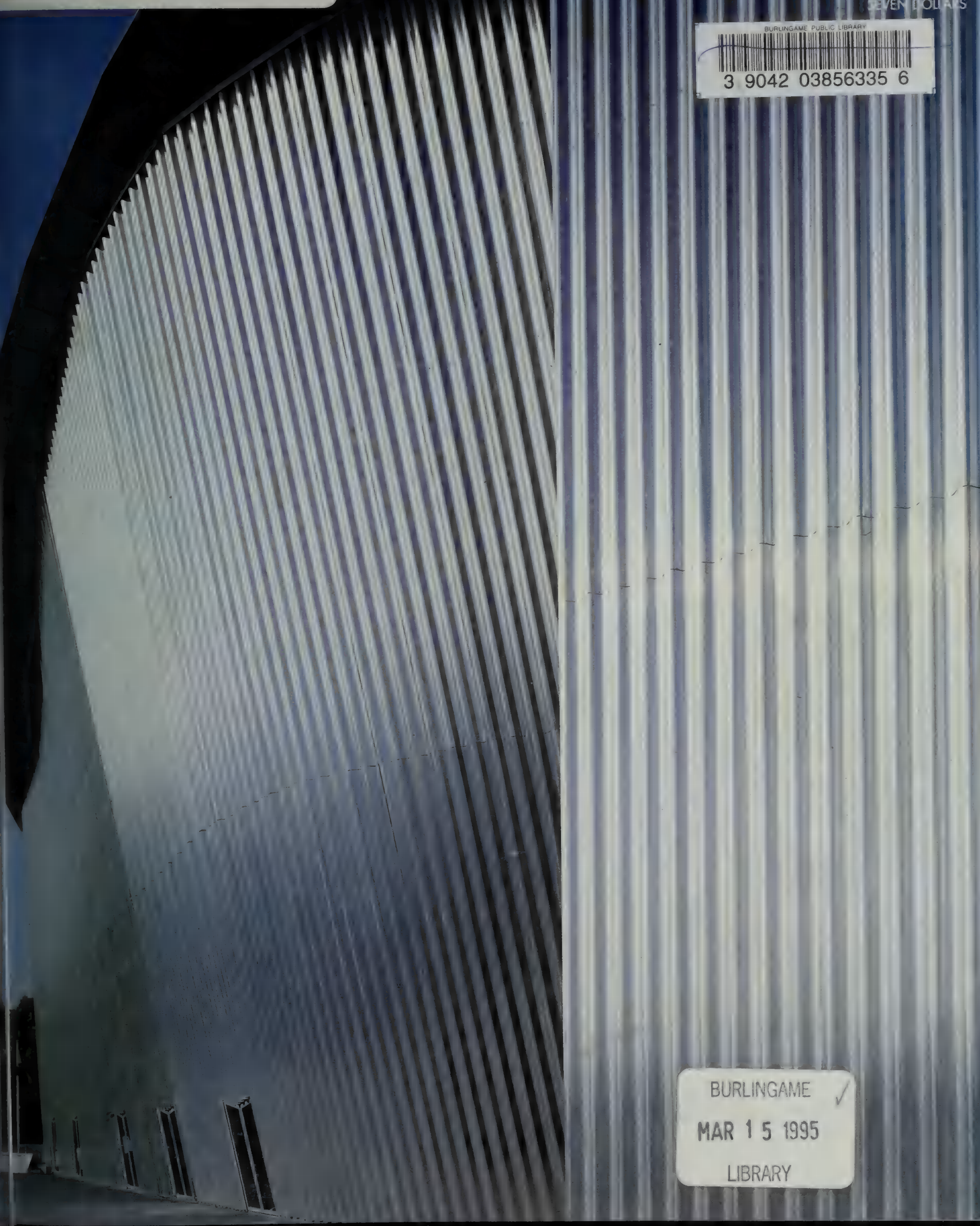

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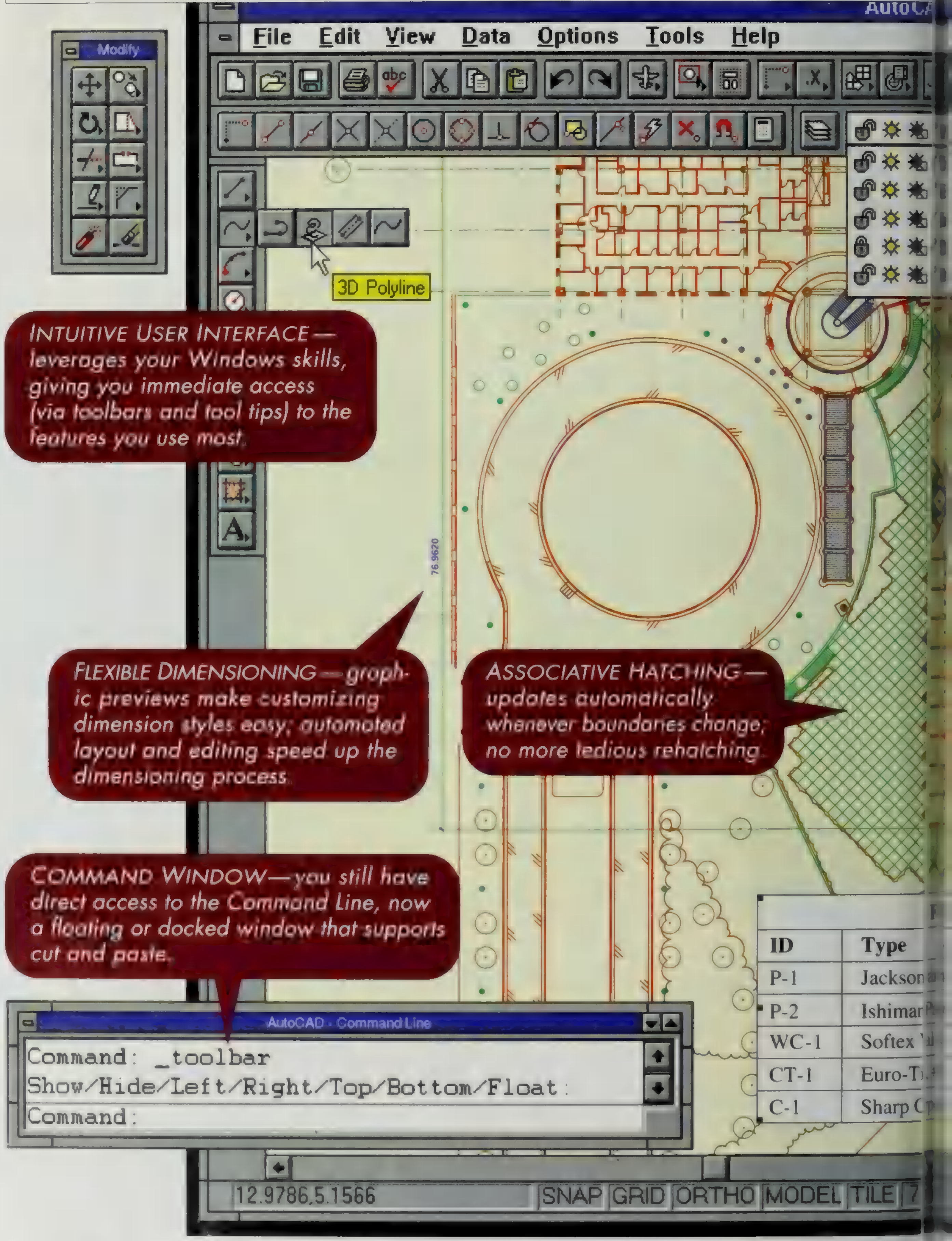
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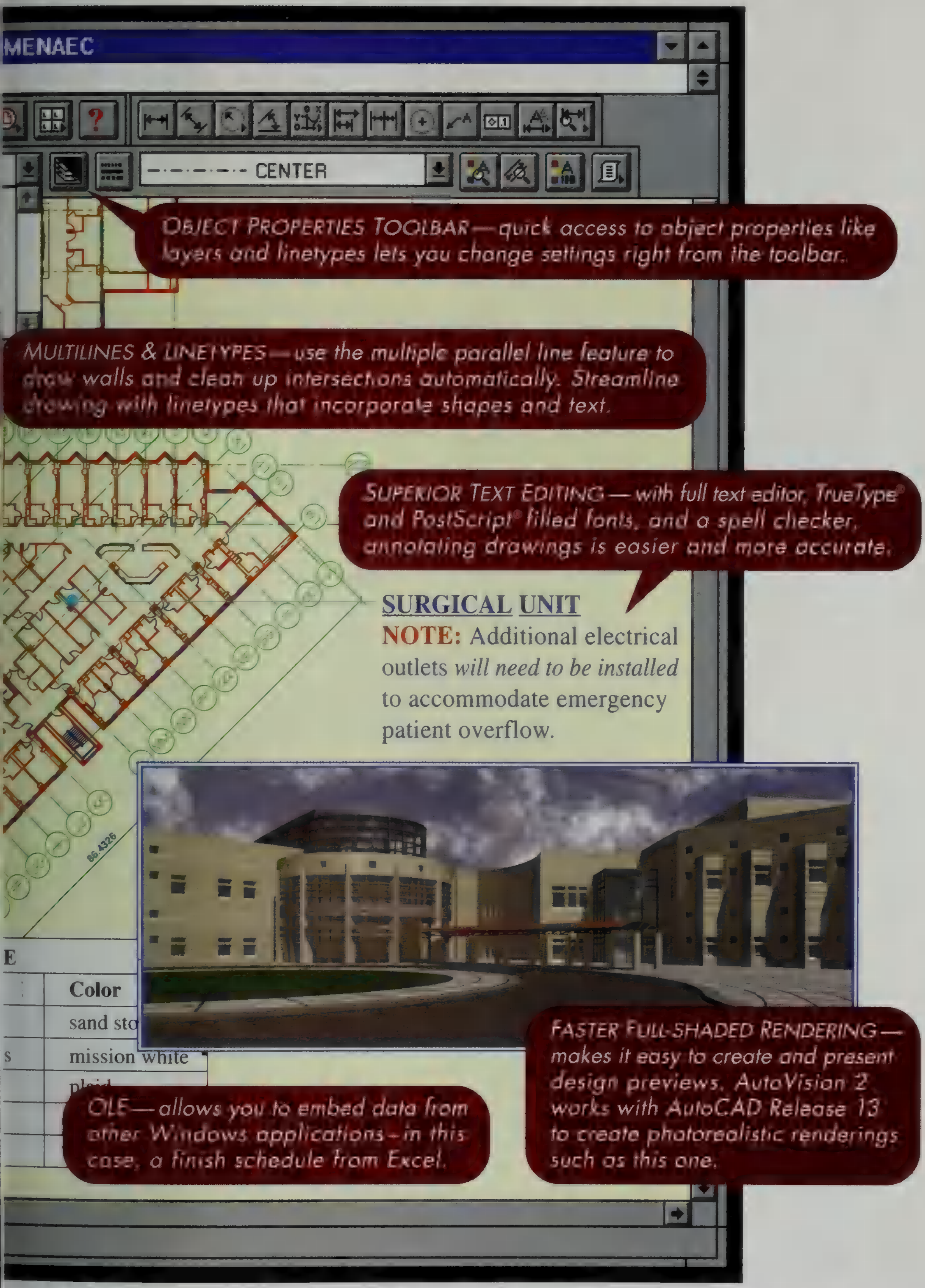

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Letters

Stern Words

Regarding your mention of Robert A.M. Stern's "Affordable, Adaptable Home" featured in June 1994's *Life Magazine* ["Bob Bats 500," RECORD, January 1995, page 15], I wrote a lengthy letter to *Life* challenging the house's affordability.

I lamented that, for what it would cost to build in the geographical area of my practice, Stern's house would not necessarily outsell an equally-priced house of far less character with more square footage and more property. Built with the changes recommended by a builder quoted in the article, the house would be undistinguished among the bland builder boxes which are taking over the suburbs.

It would be interesting for RECORD to follow the actual building of several of these houses to assess how they actually fare in meeting the challenge to build affordable housing for the middle class.

Kevin L. Mason, Jr.
Architect
Westfield, New Jersey

Formal Credentials?

I read with great interest your editorial about regulating the practice of architecture by the National Council of Architectural Registration Boards [RECORD, August 1994, page 9].

We totally support your views in the final paragraph saying "...but [illegible] the candidates to prepare [illegible] as best they can. [illegible] has a right to [illegible]

versities in California. In most countries, to get a degree from a government-accredited school of architecture means we all have to start from square one of typical classroom lectures. For me, those 14 years of experience in architectural firms doesn't help much to secure a place in these schools.

Stanley Wong
Sabah
East Malaysia

Satisfied Client

I just read the wonderful article on the Banner Building project by Ed Weinstein of Weinstein Copeland Architects [RECORD, January 1995, pages 86-87]. I am overwhelmed by the insightful consideration you showed to the project and its "Mom."

Having been on the client end of the project, I have much to say about the courage and foresight it takes to be the first initiator. I think it is a genetic anomaly to feel so passionate about architecture and building. I cried when Ed showed me the first drawings; now here it is in all of its bold glory.

This year I am celebrating 20 years in business as a designer/artist. I think it is a great milestone for any business, but more so, even in this day, for a "Woman-Owned Business." This company has not only been able to provide opportunities for innovative design solutions with architects and designers for their projects, but has provided commissions for our own built projects such as our studios, two homes, and of course the Banner Building (all which have won various AIA awards for each firm commissioned).

Karyn Rolstad
Bannerworks, Inc.
Seattle, Washington

Continued on page 111

Calendar

March 15-17

WestWeek 95, Pacific Design Center, Los Angeles.

March 31-April 2

Monterey Design Conference at Asilomar on "Seeing Is Believing." Among the speakers will be Peter Q. Bohlin of Bohlin Cywinski Jackson; Samuel Mockbee of Mockbee-Coker Architects and professor of architecture at Auburn University, Canton, Miss.; Ted Flato, Lake/Flato Architects; Michael Bierut and James Biber of Pentagram Architectural Services. Call Donalee Hallenbeck at 800/886-7714 for more information.

April 23-25

Contract Interiors exhibition, sponsored by the British Contract Furnishing Association, will be held at Olympia's Grand Hall in London. Ring 0181/910-7872 or fax 0181/910-7930 for program information.

May 5-8

AIA National Convention and Expo will be held at the Georgia World Conference Center, Atlanta. For more information, call 800/305-7737.

May 20-June 15

World Architecture Exposition, to be held in Nara, Japan, in 1998, has scheduled a pre-event, the WAE Trieniale at Nara , with symposia, lectures, and an exhibition of 21 young architects' works. Contact Mr. Kitamori or Ms. Tsunekawa at 1-1-1, Nijo Oji Minami, Nara 630, Japan, or call 81/742-34-1111; fax 81/742-36-0310 for details.

May 23-25

Lightfair International, Navy Pier, Chicago. Call 404/220-2217 for conference information.

May 23-25

The ICFF exhibit of contemporary furniture will be at the Jacob Javits Center in New York City. Call 800/272-SHOW for attendee information.

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ARCHITECTURAL RECORD

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Project: St. Paul's Lower School Building
Brooklandville, MD
Architect: Grieves & Associates
General Contractor: Henry H. Lewis Contractors Inc.
Roofing Contractor: Fick Brothers
Custom Color: Arcadia Green
Profile: Integral Standing Seam

ARCHITECTURAL RECORD **3/1995**

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Robert A. M. Stern's instant landmark on the Burbank freeway (page 72).

Next month

Record Houses includes U.S. designs by Turner Brooks, Frank Israel, Judith Sheine, Hariri and Hariri, Koning Eisenberg, Fredrick Phillips, and Dean Wolf, and two overseas houses, one in Tuscany by Ettore Sottsass, another in Switzerland by Gwathmey Siegel & Associates.

Also in April:

In The Profession

Features on small-town architectural practice; and on new approaches to kitchen and bath design.

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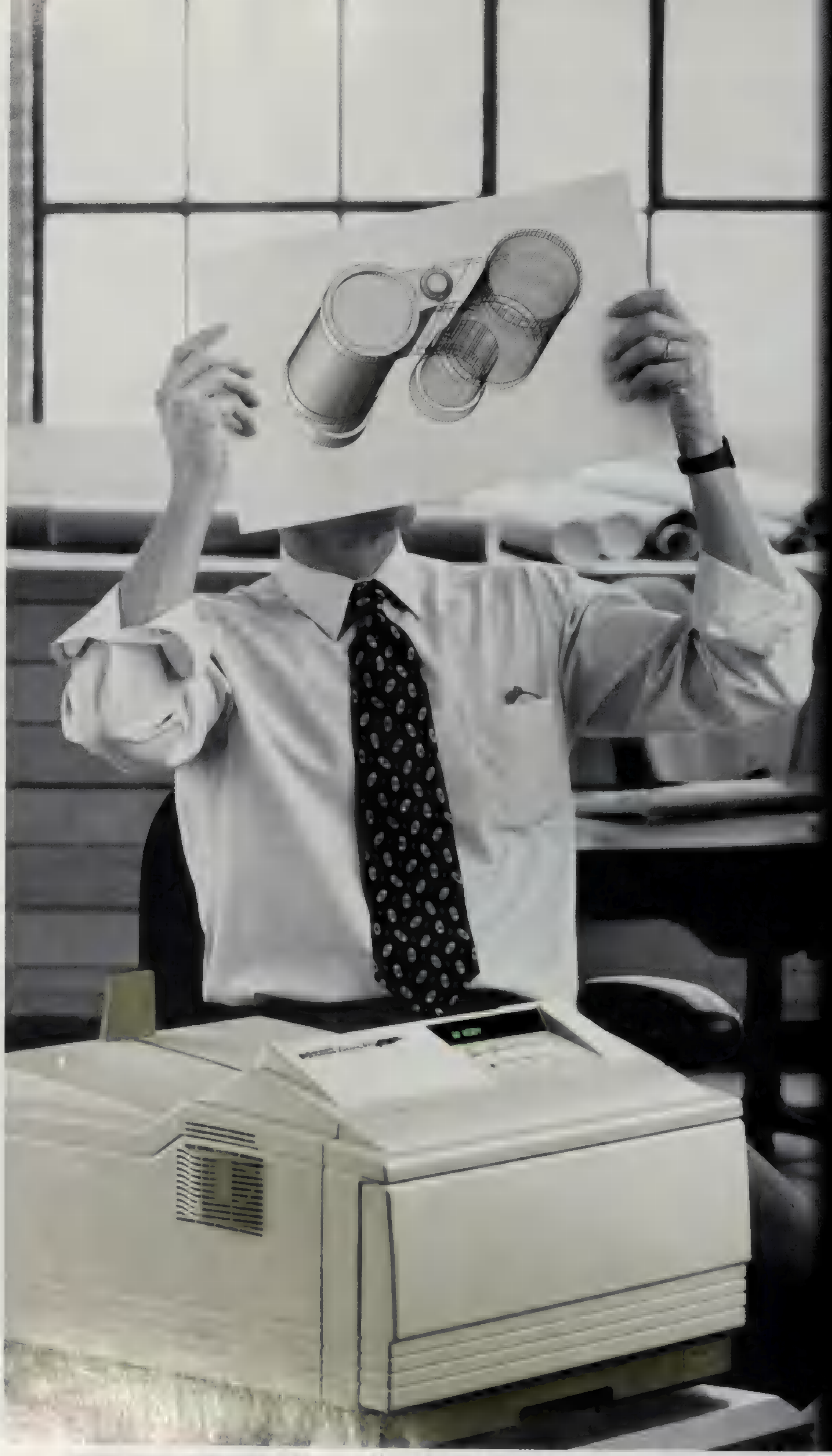

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Architectural Carpetbaggers?

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Not a week goes by in any community in the country without XYZ Developer or John Smith College or the Jonesville Art Museum announcing that it had commissioned I.M. Pei or Phillip Johnson or Michael Graves or Frank Gehry or KPF or Cesar Pelli or some other "signature" architect to design the office tower or biology lab building or Modern Art annex. Or, in an admirable effort to widen the net, had invited a short list of three (or eight, or twenty-eight) celebrated firms to submit credentials or design proposals.

The outcry is immediate—and predictable. Aren't our homegrown firms good enough? What's it costing us to bring in an outsider, in fees and added construction cost? What do they know of our local culture, marketplace, the idiosyncrasies of codes, zoning, or construction practices?

On the surface these concerns have an element of merit. The decision to go outside gives the appearance of casting aspersions on the ability of local firms to provide the kind of service the commission demands. It seems to insert a hypocritical note into local clients' and benefactors' expressed commitment to helping the community when they go outside to confer plum commissions. Often, adding insult to injury, a local firm or two is added to the candidate mix to give the appearance of fairness to what is often a pre-wired decision. Moreover, a common practice is to divide the design contract so the "signature" firm takes the work through design development, whereupon a local firm, often designated as "architect of record," does contract documents and administration.

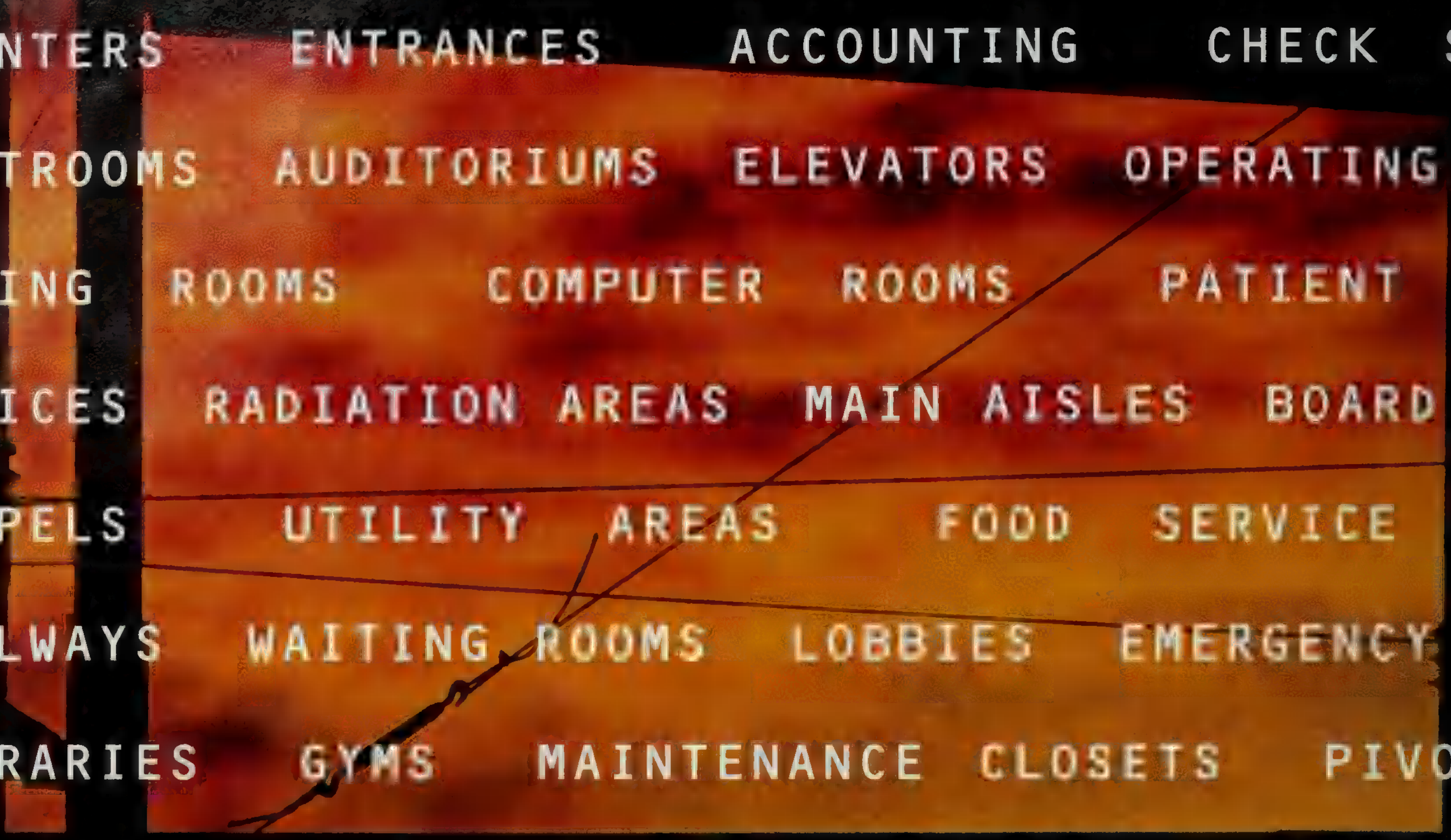
There's some justice, therefore, to the grumbling. But look at it from the viewpoint of the customer, the board of trustees or developer or city fathers who see this as an opportunity to get the very best design as they see it, whether in-house or imported. It supports the anecdotal axiom that good design adds value; that selection should be determined by standards uncolored by "motherhood" and local loyalties; that tapping an outsider challenges local firms to review their design values and hiring practices; and that it raises the level of public discourse by introducing possibly new ways of looking at the local vocabulary of architectural form and content. As to whether it costs less or more to bring in an outside firm versus going local, there is no real evidence either way, beyond the fact that it takes more of an outside firm's time to service an out-of-town client, that innovative designs have been known to add to construction costs, including change orders, but that a local associated firm can overcome many of these problems.

Don't forget a long list of historic precedents that includes Sir Edwin Lutyens and the Viceregal Lodge, New Delhi; Leblond and Rastrelli, who served Czar Peter the Great in designing the palaces in and around St. Petersburg; I.M. Pei and the Grand Louvre; Jorn Utzon and the Sydney Opera House; the many U.S. firms doing work in the Pacific Rim.

All of which brings us back to the underlying issue: what's wrong with hiring local firms? The answer is: nothing. A local firm should be allowed to do the work if its design record is of a caliber to seduce the client as customer and keeper of the purse strings. If it isn't, the client is at liberty to bring in any firm that raises the profile of the project (a story has it that the main benefactor of a newly founded New Jersey college insisted on a highly controversial outside architect on the grounds that the polemics would attract students); that delivers specialized expertise; or that builds on an existing, happy relationship.

Many firms are quite content to provide all services on some projects and "of record" services in case of an outside firm. As for the local firm that wants to step up its share of "signature" work, it can do so best by developing (or hiring) the kind of design or specialty expertise that has worked for the outsider. The magazines, to which many clients turn when seeking an architect, are constantly on the lookout for emerging local talent of the type that eventually grows into "signature" firms.

But such an effort must be in the firm's focus, and on its main agenda. *Stephen A. Kliment*



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Paris

Un Grand Projet: Portzamparc's Cité East

pened January 12, the final phase of
hristian de Portzamparc's Cité de la
Iusique—Cité East—adds a public face to
ne music and dance conservatory opened
ve years earlier. One of the last "grands
rojets" to open during President Mitter-
and's tenure, and one of the rare cultural
enues in this northeast corner of Paris, the
roject aims to bring music from all disci-
lines and epochs to the widest possible
udience.

ortzamparc's two buildings frame the
rande Halle, a turn-of-the-century slaugh-
erhouse turned exposition hall at the
outhern entry to Bernard Tschumi's Parc de
 Villette. These three very different archi-
ectures are typical of the stylistic
habitation found on the city's poorer
astern fringe where, in an effort to increase
development, the government launched a remarkable wave of architectural competitions. The result is an overlap of cutting-edge designs and working-class neighborhoods.

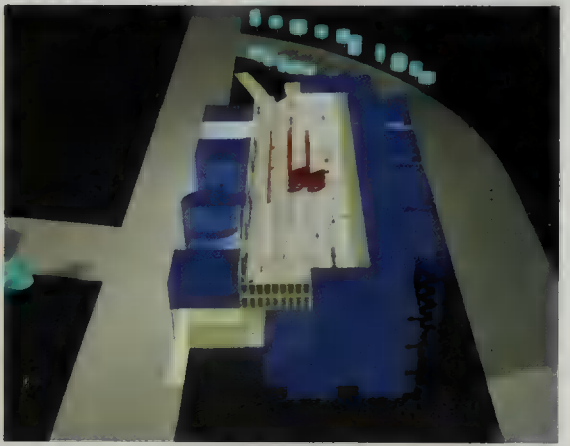
The newest arrival, Cité East, includes a 2,700-seat concert hall, a music museum with over 4,500 historic instruments, an information center, 82 lodgings for conservatory students, a cafe open to the exterior, a police station, and parking.

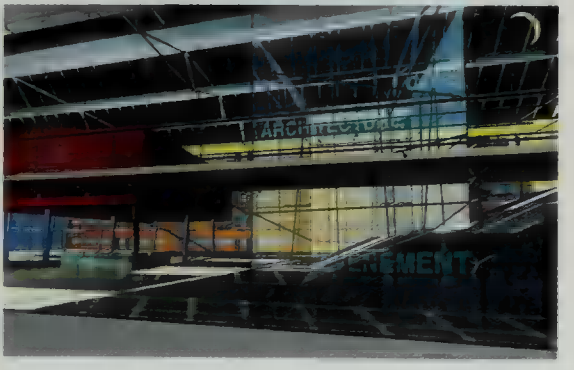
The many components of the 53,200-square-meter, $120-million project are joined by a glass-roofed spiral street which doubles as the foyer for the concert hall. It is a space that Portzamparc, the 1994 Pritzker Prize winner, describes as a "conch sea shell" full of reverberations let loose into the city. *Claire Downey*

France

Winner: Tschumi's Architecture School

A vast internal forum animates Bernard Tschumi's winning design for a new architecture school on the outskirts of Paris. In Tschumi's scheme, the 24,000-square-foot "exposition hall" is carved out of a 200,000-square-foot block of studio spaces, computer studios, three auditoriums, and a library. A terraced grand stair—where students can comfortably loiter—sweeps down into the space from the studios and jury rooms above. But the school, designed for 1,200 students, is not meant to become an insular academic nest. Instead, Tschumi's mandate was to draw visitors here from the capital city for conferences and other activities related to architecture. He created a veritable architect's village. The school is a 30-minute drive from the capital city— in Champs-sur-Marne, alongside other university buildings by Chaix et Morel and Dominique Perrault, the designer of Paris' Tres Grand Bibliothèque. The first phase is scheduled for completion in 1997. *Nicolai Ouroussoff*





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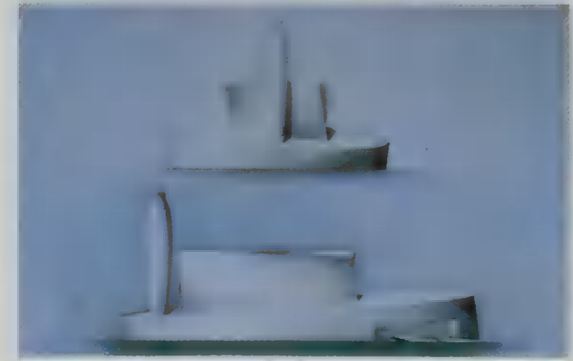
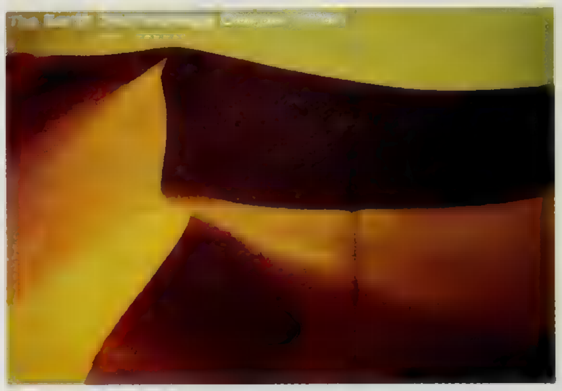
track's Tomb for he Millenium

hilippe Starck's winning design for a
ewage-treatment plant at Vitry, France,
urns incinerating and recycling of garbage
to a "mysterious" experience. The $320-
illion sculptural tomb is set to start up in
02. *Claire Downey*



SMPS Top Awards Honor 30 Marketing Professionals



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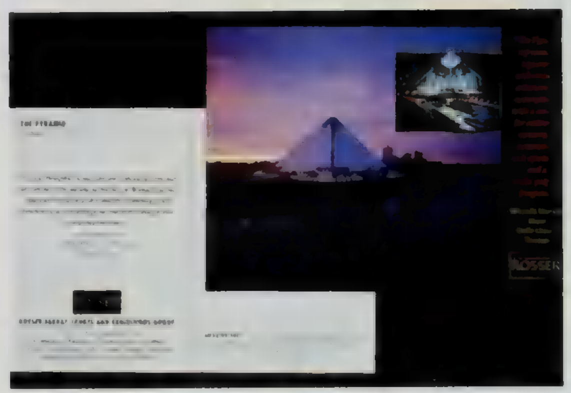

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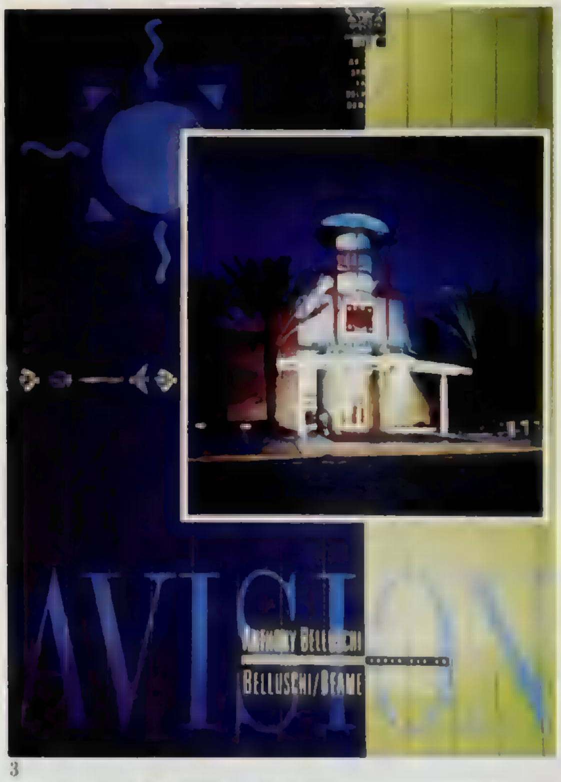

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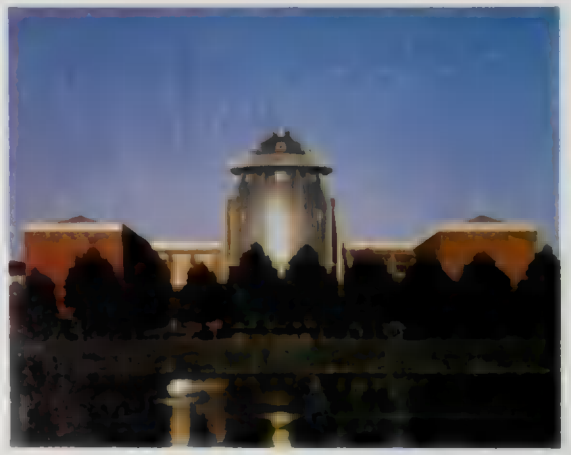
Earth Technology Corp., Rosser Internatonal, and Anthony Belluschi Architects are three of the 30 winners of 1994's Society for Marketing Professional Service's National Awards Program. The awards, begun in 1979, celebrate a range of successful marketing strategies by architects. Earth Technology Corp. won for its 1993 annual report, which is layered with vellum overleafs depicting golden sand dunes (1). Rosser International, which designs sports facilities, was cited for a direct-mail campaign featuring a giant stainless-steel pyramid under a brooding red sky. The series of postcards—mailed out to potential clients—is stamped with quotes from the firm's partners about the projects (2). Belluschi won for elaborate company brochures (3) highlighting the diversity of the firm's work. They depict a pastiche of projects and images, most notably photos of a dizzying swirl of atrium stairs. Awards are presented at the society's convention in Chicago. ■

Aldo Rossi's Glimmering Tower

Across the river from Maastricht's historic, romanesque monuments, Aldo Rossi has designed a haunting abstraction of a local factory to display the city's art. The brooding brick and stone-clad museum is built in the shape of an E. A grand stairway cuts the structure in two, rising up towards a free-[illegible] tower—the bulbous, [illegible] the building's most dis-[illegible] Bonnefantenmuseum, [illegible] contains the city's [illegible] Christian art, and scu[illegible]



Briefs

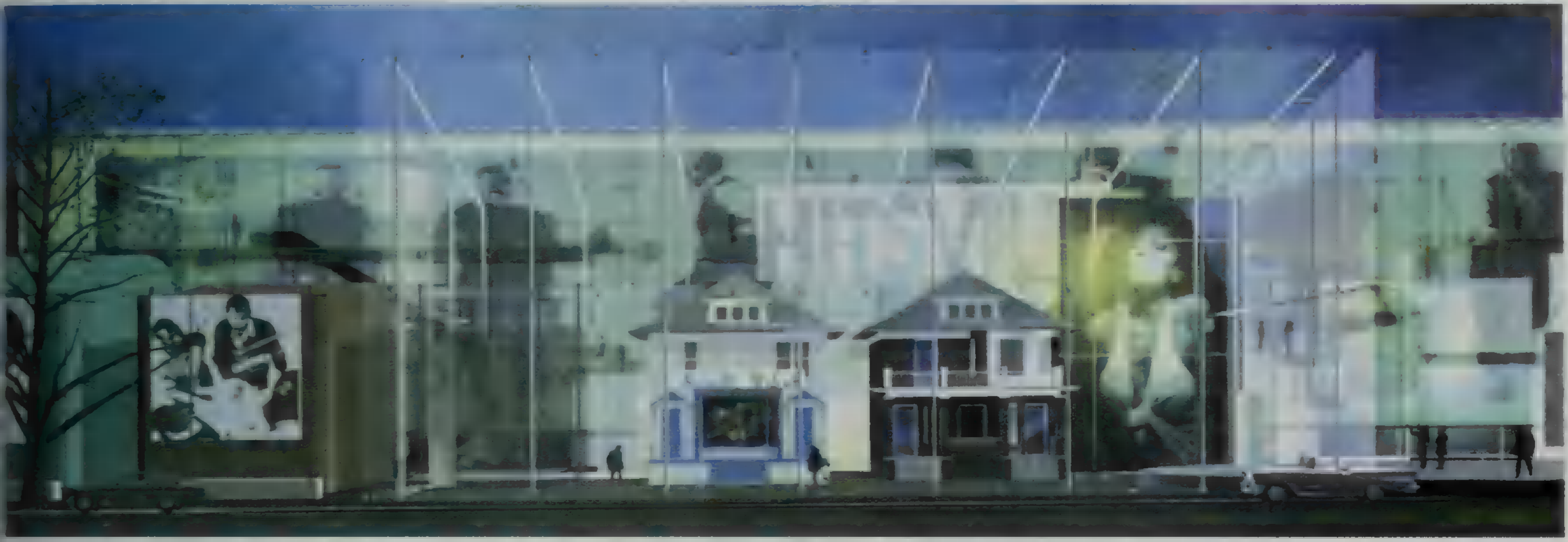
- A year after Charles Moore's death, the future of his studio house in Austin, Tex., is still in doubt. Last September, the University of Texas declined an offer to buy the property by Moore's heirs. A foundation has since been set up to raise funds to save the building: $350,000 is needed to retire the mortgage and an endowment of $1.5- to $2-million should be in place for operations and maintenance. Meanwhile, the Austin chapter of the AIA is considering adopting the studio for its offices. *Gerald Moorhead*
- The family of Dr. Martin Luther King Jr. wants to build a $60-million interactive park in Atlanta at the site where Dr. King was born and where his crypt lies. The proposal is part of the family's continuing efforts to block a federal-government plan to build an $11.8-million visitor's center for the same site.
- A 1995 calendar that also contains a listing of all African American architects in practice in the U.S. is available from Jack Travis Architect, 227 West 29th St., NY, NY 10001, for $5. Call 212/594-1122.
- Herzog and de Meuron, a Swiss firm, has won a competition to design the annex to the Tate in London. Rem Koolhaas and David Chipperfield were also contenders. The anne will be housed in an abandoned power statio on the Thames.
- In conjunction with the International Markets and Practice Committee of the AIA, RECORD is preparing a survey of architects who are doing work abroad. Interested firms should contact Russell Keune, AIA, 1735 Ne York Avenue, NW, Washington, D.C. 20006. Fax: 202/626-7426. Deadline is April 21.
- Architect of the Capitol, George M. White, will not seek reappointment after his curren term ends Nov. 21. White will have served 2 years in the post, which was established in 1793 and whose incumbent, unlike White, often has not been an architect. The AIA an other groups are working to redefine the post's responsibilities, which comprise man-agement of and housekeeping for the Capitol' 275 acres of grounds and the buildings that stand on them.

Call for entries

Architects with work in Asia are invited to submit projects for possible publication in RECORD's third annual Pacific Rim section. Submission deadline is April 14. Send entri to Cliff Pearson, Associate Editor, 1221 Avenue of the Americas, NY, NY 10020. ■

etroit

lotown Museum to Honor Platinum Performers



elier 4 Architecture has completed a tenta- e design for the future Motown Historical useum in Detroit. The proposal, still in the nceptual design phase, encases fragments the famed neighborhood—where Berry rdy set up shop with a borrowed $800 in 59—in a giant, three-story, glass and steel rium. Administrative areas wrap around o sides of the atrium, while three limestone towers house the museum's permanent collection, which includes archives and a research center. The 800,000-sq.-ft. museum will include a 300-seat theater, a cafe, dance lounge, and a library/archive. A "Historic Hitsville" exhibition and a radio station/ deejay booth are also planned. A giant media curtain is designed to loom over the entire space, forming a vibrant backdrop to the atrium. Described as "an ever-changing show," the screen will be visible from the street—as if the museum itself were a giant video/TV display—and from planes landing at Detroit airport. Intended to be a true monument to a heritage that produced stars like Stevie Wonder, the Spinners, and the Marvelettes, Motown is now preparing a national campaign to raise funds for the project. ■

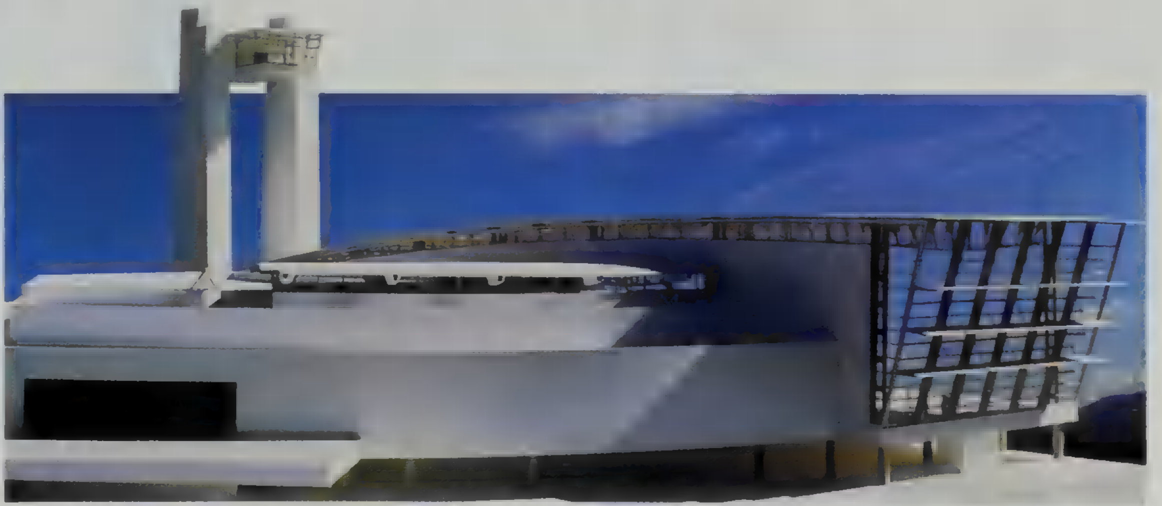
ouisiana

ourist Center for ajun Country

wet marshlands 25 minutes north of New leans, a visitor's center will subtly draw on al culture and its natural surroundings for spiration. Piazza Architecture's Tourist mmission Building—built in part for Hol- wood location scouts—is divided into three erconnected "residential-like" buildings, to e it a human scale. Corrugated-metal ofs and 800 sq. ft. of covered pinewood cks reflect the local architecture. And the ilding is raised on stilts: most of the site is oded during the hurricane season. ■

Las Vegas

Sober Landing for Vegas Visitors



Las Vegas' new airport terminal will be sober, not glitzy—at least on the outside. Tate and Snyder Architects, in association with Leo A. Daly, have designed a swooping concrete and glass terminal at McCarren International Airport. Outside, the building vaguely evokes memories of Saarinen's Dulles International airport. Inside, the terminal is a theme park. Neon signs will mimic the city's strip-like streetscape, evoking a "bright, noisy, and visually exciting gaming environment." The $180-million project will add 52 new gates—nearly doubling the airport's capacity. It is scheduled to open in early 1998. ■

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Mid-sized Buildings, Houses Are Main Victims of Kobe Quake

he Great Hanshin earthquake that struck obe, Japan, in the early morning of anuary 17 (on the first anniversary of the 994 Northridge, California quake) will be xtensively studied in Japan, the U.S., and lsewhere. It is the first instance of a direct it by a large earthquake on a modern downown area. The author experienced the arthquake (in Osaka, 27 miles from the epienter and about 13 miles from the closest reeway collapse), and had the opportunity o enter Kobe with a Japanese TV reporter nd camera crew 24 hours later. He was in apan as one of a group of 40 U.S earthuake experts and officials preparing for an rban Earthquake Hazard Reduction workhop. By Christopher Arnold.

irst impressions of a disaster of this scale re powerful but necessarily incomplete. Yet, ome authentic observations can be made nd a few tentative conclusions reached.

eismic design has progressed rapidly in the st 30 years. In particular, discoveries were ade in reinforced concrete design in the 0s, and translated into codes and design ractice in the mid '70s—both in the U.S and apan. The general requirement was to reatly increase the amount of steel reinforcg, and to place it so that, when shaken, the oncrete structure behaves more like a steelame building and deforms without ollapsing, greatly enhancing safety.

he world-wide economic boom of the '60s esulted in tremendous urban building develpment, much of it in reinforced concrete, so at today most cities have a preponderance f structures built with inadequate seismic nowledge, regulated by inadequate codes, nd often inadequately designed. This attern was true in Kobe. Buildings well esigned to modern seismic standards (from e '80s on) performed well in Kobe in that ey did not collapse and no external damage as visible. Statistically, even the older (pre-0s) buildings did not do too badly, many pectacular failures notwithstanding.

ue to the time of the earthquake (5:46 a.m.) ost casualties occurred not in office buildgs, stores, on freeways, or in industrial ants, but in older wood houses with light ood frames, often with an open first floor (for a store or small workshop) and a heavy ceramic tile roof over a layer of sand or soil. These dwellings are liable to sudden collapse and to fire caused by ruptured gas lines. In the cold January night air, many house heaters were on.

Looking for patterns of damage in bigger buildings, I noted the large number of structures in which an intermediate floor collapsed (2), with no sign of an architectural irregularity at that floor. A number of theories are circulating in engineering circles to explain this phenomenon, which can create terrible life loss in an occupied building.

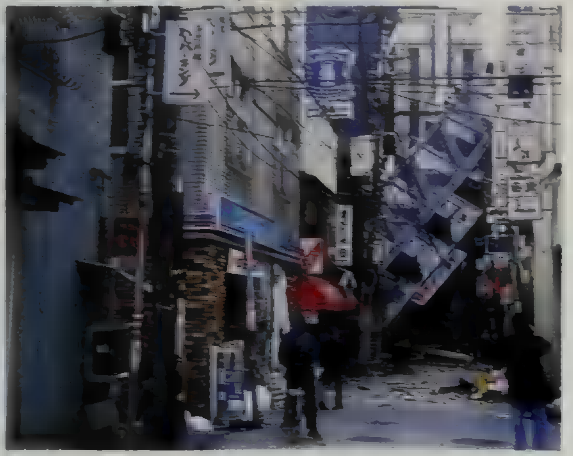
Many building collapses and other severe damage could be traced to architectural irregularities, particularly "soft" first stories, that is, open or insufficiently braced. In concrete-frame or shear-wall buildings this often leads to overturning or first-floor collapse; in steel buildings the result is more often extreme distortion and effective loss of the building. Sources of additional damage were setbacks that created weak horizontal planes, and other irregularities that created stress concentrations and torsion, with severe damage to the structural resistant system. As in Mexico City, severe damage occurred to mid-rise buildings (up to about 20 stories), rather than the many high-rises.

In Mexico, one saw many "pancaked" buildings, in which floors are piled on one another due to column failure and lack of shear walls, creating devastating entrapment and casualties. While a few such failures were visible at Kobe, the main mode of total failure was overturning, in which the building remains intact, but topples quite slowly to a horizontal position. This was attributed chiefly to narrow buildings (common in Japanese cities) where mostly solid side walls remained intact. The damage to Kobe appears to be in accord with the level of ground motion experienced.

Earthquakes are not an aberration but a natural environmental phenomenon which we face, through public policy, by balancing risks against the economic costs to reduce them.

Christopher Arnold is an architect and seismic authority in San Francisco.

© Christopher Arnold photos



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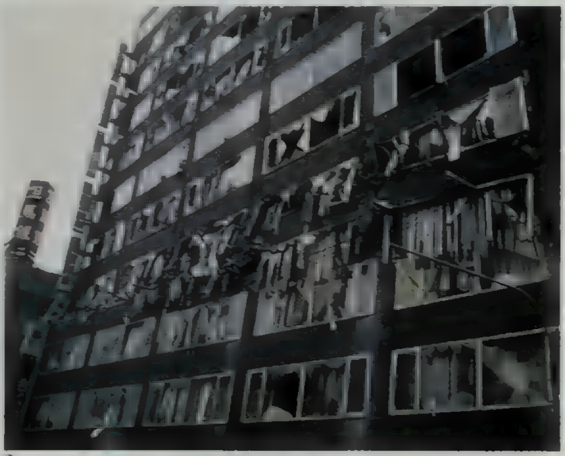

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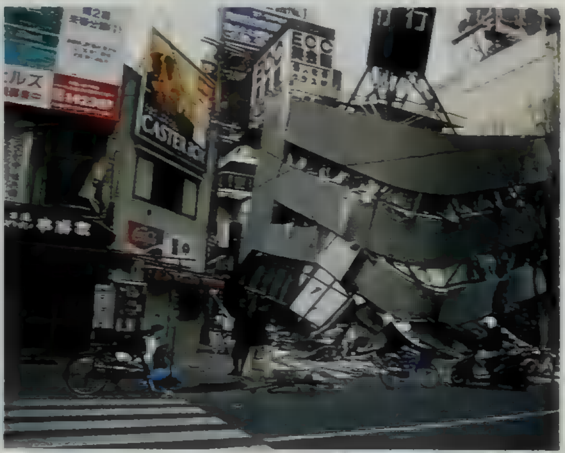

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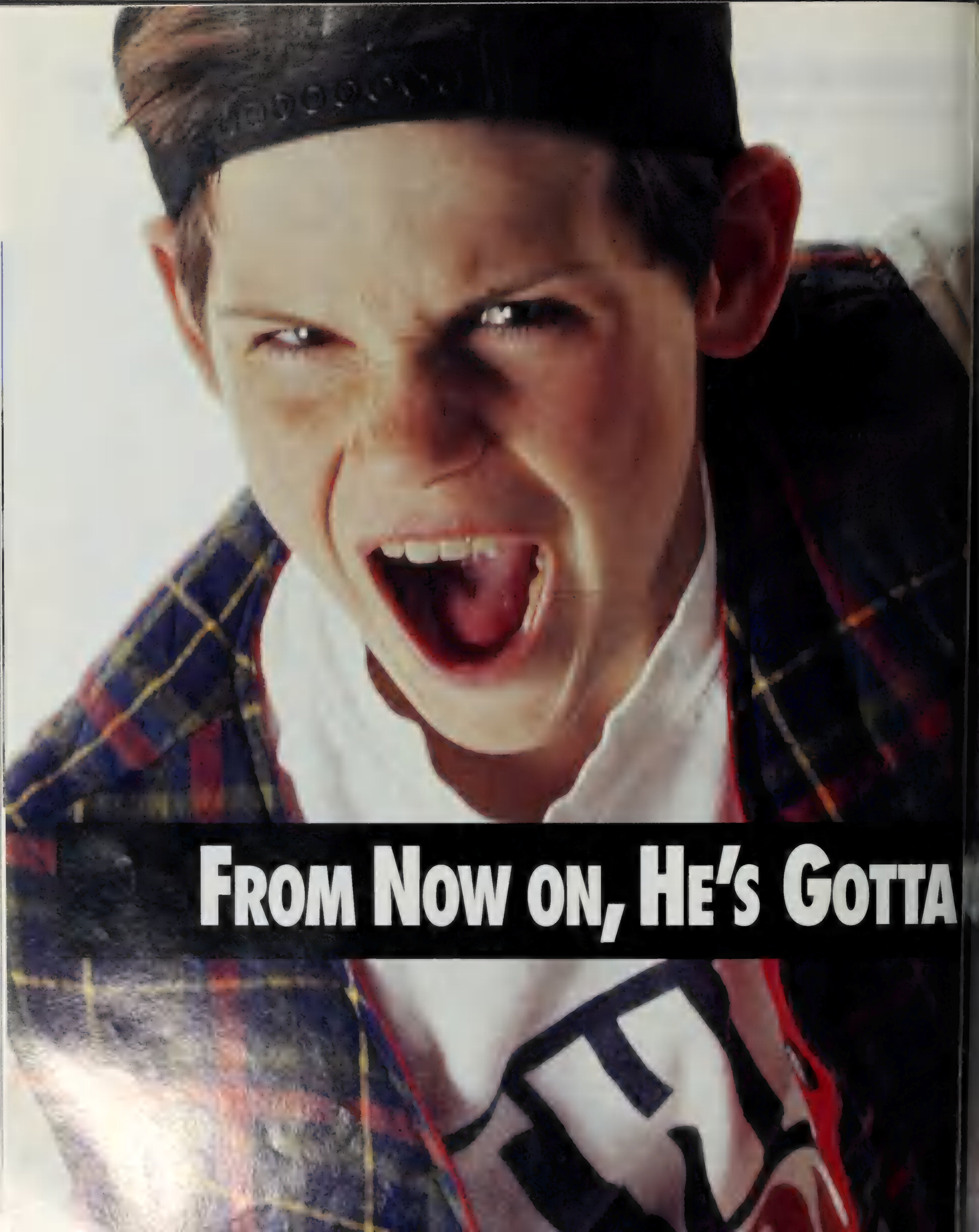
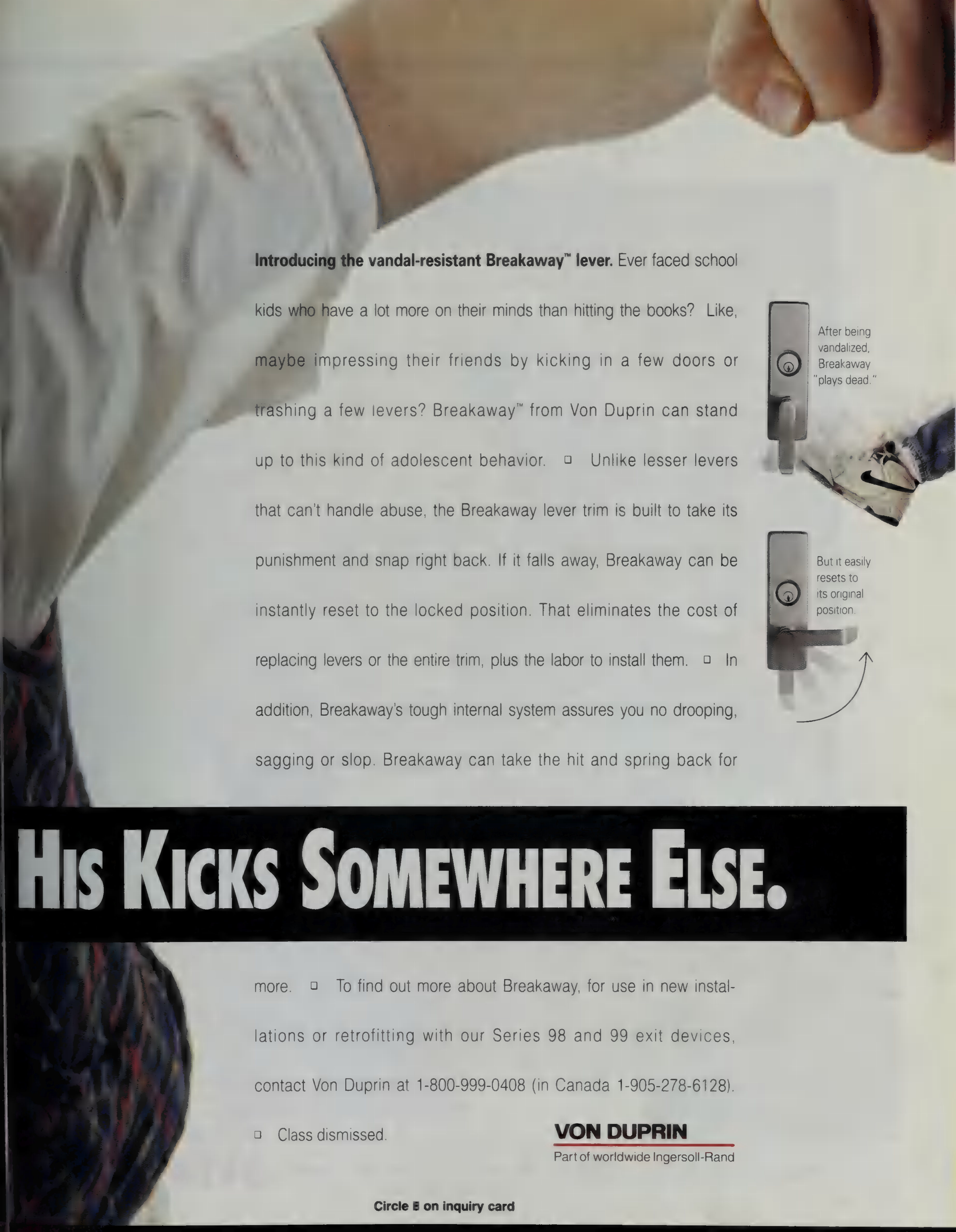
Scenes in Kobe, hit by the Great Hanshin earthquake of January 17, 1995, show overturning caused by the narrowness of many buildings (1), "pancaking" or collapse of only one intermediate floor due to column failure or lack of shear walls (2), and collapse caused by a "soft" or open first floor (3).


FROM NOW ON, HE'S GOTTA



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Trouble in River City

As gambling becomes the solution-of-the-month for fiscally strapped states and localities, some casinos threaten to behave like urban-design bullies.

By Errol Barron

In case you hadn't noticed it, gambling fever is sweeping the nation. Once tinged with a slightly exotic, vaguely forbidden reputation, casino gambling is now perfectly legal in nine states (Colorado, Illinois, Iowa, Louisiana, Mississippi, Missouri, Nevada, New Jersey, and South Dakota) and is being seriously considered for legalization in 14 others. Casinos can also be found on Indian reservations in 11 states. [For a look at casinos along the Mississippi, see "On the Waterfront," page 100.]

Altogether there are 436 gambling establishments in the United States, of which 84 are on Indian reservations and 142 are riverboats. Since the boats are not legally required to cruise, they tend to stay in one place near town centers, becoming important parts of the urban fabric.

Powerful magnets drawing people from entire regions, casinos are raising complex planning and design issues, whether they are on Indian reservations, moored on rivers near financially pressed towns, or set in big cities. Backed by large corporations skilled at lobbying and power politics, casinos are a new force on the urban landscape—one that can move with alarming speed and intensity once approvals have been granted.

There is a frantic exuberance to the national enthusiasm for gambling, a devil-may-care attitude associated with the kinds of baroque behavior found in societies harboring an ill-defined but palpable sense of desperation. One is reminded of Venice in the 18th century, with its great outpouring of architectural extravagance, just as its days of mercantile superiority were waning. While too convenient to cite here, ancient Rome also comes to mind. And there is our *fin-de-siècle* premonition that something very big is happening: ill-defined and perhaps malevolent.

For whatever reason, people are gambling (42 million in 1994, according to unofficial sources) and the amounts of money to be made are so astounding that city and state governments, almost universally facing large budget deficits, are looking at these opportunities with a combination of amazement, suspicion, and relief.

The historic city of New Orleans is no exception. The Crescent City is providing a textbook example of the threats of casino gambling to urban areas—especially historic districts—and of the inability of regulating bodies to react in an organized way to these major changes. So powerful are the casino forces and their promises to generate money that even this city, with its well-organized historic district agencies, including the second oldest historic commission in the U.S. (the Vieux Carré Commission) has been caught almost without recourse.

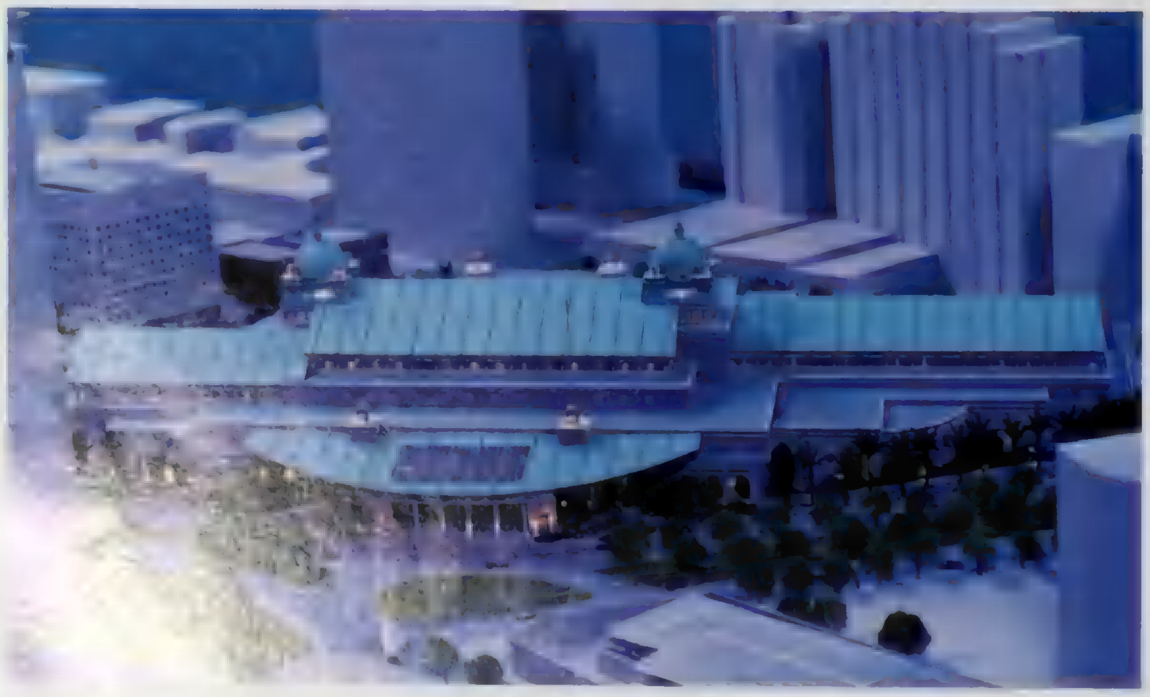
Errol Barron is a partner in the New Orleans firm of Errol Barron/Michael Toups Architects and a professor at Tulane.

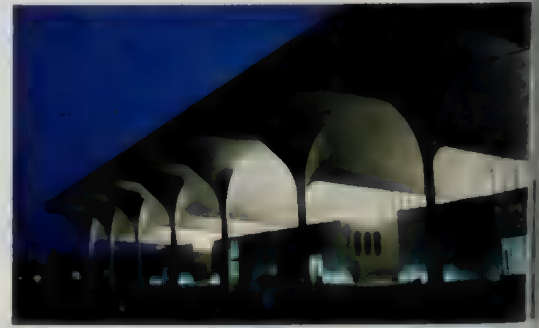
Leaping at the chance

New Orleans is an easy mark. Poor but voluptuous, the city is too destitute to resist the licentious appeal of the casino proposals. Its politicians have leapt at the chance to realize an income for the city (and some say for themselves). With dwindling revenues from a virtually defunct oil and gas industry, a state burdened with a $600-million debt, a harrowing crime record (second highest number of murders in the U.S. last year), and a burgeoning underclass (70 percent of all births were illegitimate in 1993), the local authorities were desperate.

The first attempt at obtaining a casino licens was by Christopher Hemmeter, a Hawaii-based developer who proposed the world's largest casino at the convergence and termination of the two principal commercial stree of the city (Canal and Poydras Streets) and the Mississippi River. The casino site, which has remained the designated location throughout the debate, is the point of severa

The approved master plan by Perez Ernst Farnet Architects (below left) and the earlie Hemmeter scheme (below) both sit on the s of the existing Rivergate (bottom right).





he Rivergate "with its swooping, extravagant rches and cantilevers looked more like a building f pleasure than the new design."

uriously disconnected urban artifacts: a erry landing, the Spanish Plaza, the Joan of rc monument, the Aquarium of the Americs, the World Trade Center (perhaps Edward urrell Stone's worst building), the Riverate (an expressive concrete-shell convention tructure), a shopping mall-office tower, and a uge public-service electrical substation. At he heart of downtown New Orleans, this site as a long history and a record of ownership hat goes directly back to the King of France.

he Hemmeter scheme proposed closing anal Street, with its historic connection to he river, to construct a huge casino and an djacent "celebration park" that would eature a 22-in. deep lake in place of Canal treet and a meandering shoreline more awaiian than urban.

public outcry

he sheer size of this proposal (over a uarter of a million square feet, much of it nderground) and its exterior design based n—seriously—the Grand Palais Exhibition all of Paris rocked the local architectural ommunity to its foundations. The mayor, ho reminded some of us of the vulnerable uby Ruggles in Trollope's novel *The Way e Live Now*, enthusiastically selected this cheme and its developer without any public ody seriously scrutinizing the deal. It was irtually a private courtship. Public outcry as intense. In the end, this flamboyant, lmost ridiculous, confection and its $30-illion glass dome were thrown out when overnor Edwin Edwards, through a handicked Board of Commissioners, selected a roup of local cronies to actually be the icensed operators for the casino.

bewildering sequence of events was trigered by this decision. First, the "world's argest casino" simply evaporated before the ublic's eyes, giving way to a more sensible cheme to renovate the existing Rivergate. ithin a short time, this conversion idea was eplaced by the decision to demolish the ivergate and build a new facility, this time ll at one level, at grade. While it appeared to any that the Rivergate could and should be dapted, the jobs to be created by the demoliion of the Rivergate (a $5-million contract in self) and the new construction argued for he new building.

The demolition of the Rivergate has become a curious and poignant affair. Designed in 1962 by Nathaniel C. Curtis, Jr., it was the world's longest thin-shell concrete structure. An expensive, well-made, expressive building, it became part of the local scene.

To save this building, conservative preservationists and the avant-garde worked together. The irony of changing tastes in the architectural world was briefly overshadowed by a union of disparate but sensible groups who recognized that this decidedly Modern building was not only well-built, but had qualities that the consumer architecture of the new casino lacked. To many observers, the old building with its swooping, extravagant arches and cantilevers looked more like a building of pleasure than the new design.

The structure that is to replace the Rivergate is the work of a team of local architects and is as compromised a building as the one which is being demolished is idealistic. It is a yeoman attempt to catch the mood of a casino, but it replaces the open vulgarity of the Hemmeter scheme with a staid, humorless design that uses exposition or transportation imagery as its source. Seemingly derived from a 19th-century train station, it embodies many of the problems of consumer architecture: little or no relation of the wrapper to the interior condition, a permissive use of an inappropriate building type as a model, and a relentless pursuit of the maximum number of square feet under one roof.

Although the building has two floors underground and a huge second floor, the gambling area is all at one level covering the whole site. Its windowless, hermetic, suburban form rotated at a willful angle to all the adjacent streets and buildings has a peculiar and disturbing relation to the city. It does make for a startling contrast by virtue of these characteristics, but—unlike the Duomo of Florence, for example, which looks like a hot-air balloon come to rest in the city center, the casino design is so low and stretched out that, rather than a joyous monument, it makes a hole in the urban assemblage.

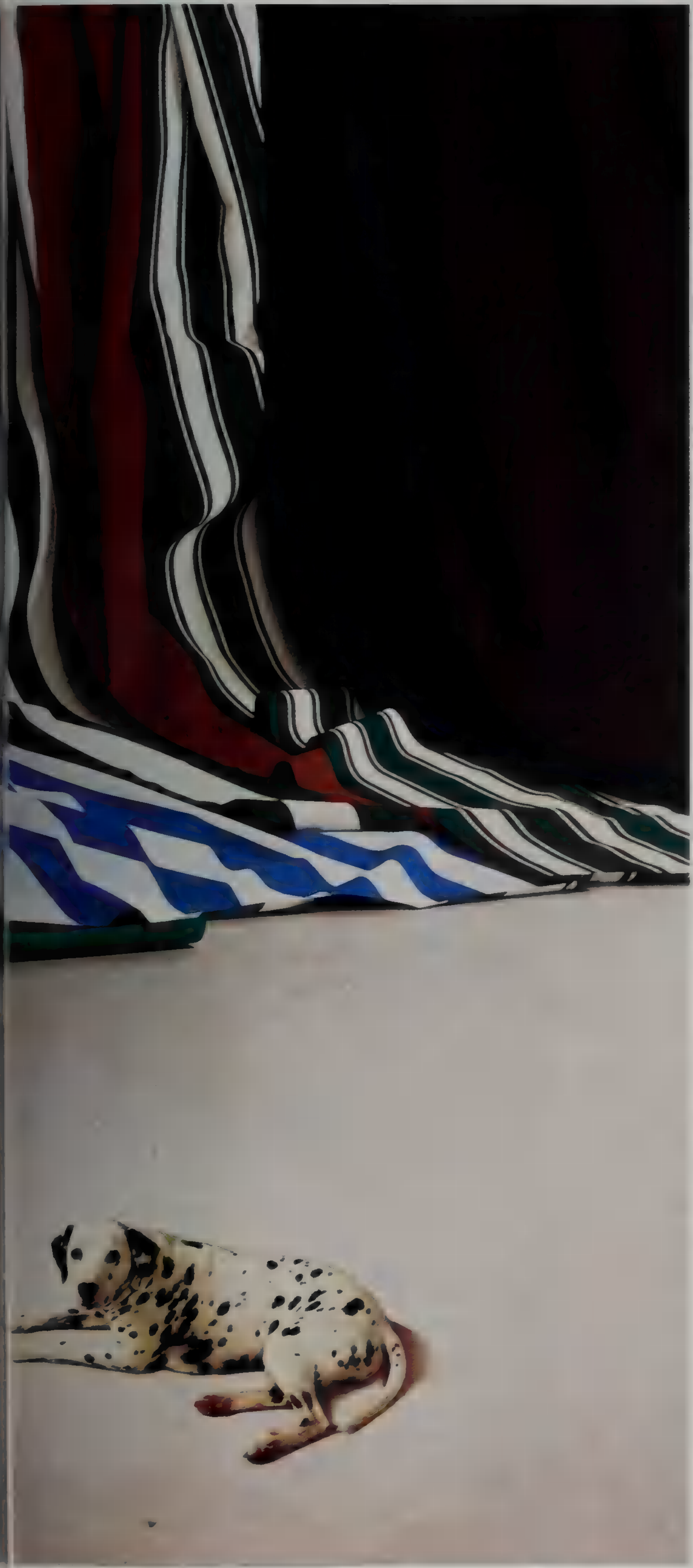
As a composition, it is earnest but not artful. One yearns for the hand of the late Charles Moore because he could have supplied the adjustments, the inflections, the flights of fancy that would have lifted this building type into the realm of successful urban design and delightful architecture. As it is, the building is not a delight. It is autocratic, an exercise in profit maximization. Lacking internal logic, it relies on bogus themes based on saccharin interpretations of Southern lore (a bayou theme here, a southern mansion theme there) to articulate its vast flat spatial condition. Cutting out daylight and other distractions from the obsessive world of gambling, it will sit in the heart of the city, gesturing insincerely while the slot machines whir inside.

More kitsch for the French Quarter?

There is also concern over the casino's impact on the historic Vieux Carré, the city's French Quarter. While the beloved image of the French Quarter as a mysteriously foreign haven for artists, ethnic groups, and colorful characters is no longer completely accurate, many people fear that the world's largest casino will strengthen the commercial forces eating away at the historic district's unique identity. Higher rents will drive out all but the high-volume tourist shops which trade in poorly made kitsch, remarkable only for its repetitiveness from shop to shop.

And it has all happened without a serious planning body really involved in the process. The chief city planner was reduced to a pawn. The Historic Districts Landmarks Commission, which repeatedly criticized the scheme as far less desirable than the existing Rivergate, was ignored and became a helpless bystander. The community's architectural and planning professionals were relegated to the status of angry onlookers. Throughout the approvals process the project has been immune to public outcry.

As you read this essay, the Rivergate is coming down and the creation of the third largest footprint of any structure in the city is moving inexorably forward. One shudders at the prospect of this huge, undistinguished building rising in the heart of New Orleans; at the prospect of the casino failing financially, as some predict, leaving an empty steel-frame-and-imitation-stucco hulk in the middle of the city; and at the prospect of the same thing happening in 14 more states. ■



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How We Talk About Design: *Designers can communicate the abstract and intuitive aspects of design with clients used to thinking in concrete terms. Product designers are showing the way.*

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Architects Out of the Loop? *By tinkering with project delivery, owners are expressing their dissatisfaction with business as usual. Do alternatives reduce architects' authority?*

Page 36

End of the Pure Design Firm? *Multi-discipline firms, with their focus on client service and efficient delivery, have much to teach all-design practices.*

Though design is central to architects' self-esteem and aspirations, its cultural profile seems lower and for all too many clients its importance is sinking. A Roper study commissioned for the AIA on how clients assess the value of architects' services showed that "the design statement or esthetics of the facility" was a major priority of only 66 percent of respondents, falling well behind fire- and life-safety and other crucial but more pragmatic issues.

An overemphasis on design, critics say, is making architects expendable. Yet Robert Gutman and other analysts still see design as the profession's primary tool for maintaining and improving both its cultural and professional status. Thus, within this section devoted to practice and technology, it's worth considering the uses of design in an era seemingly focused on bare utility.

In three related articles we look first at what architects can learn from successful product designers, who now speak a language clients understand. We also consider new project-delivery methods and multi-discipline firm structures. These offer solutions to long-standing problems, but also challenge the primacy of design—even the authority of the architect. Design's value, however, is too often conveyed only as "the esthetics of the facility." An AIA ad campaign is spreading a message that architects articulate too infrequently—that design can transform needs and constraints into something more valuable and more inspiring than the sum of the program's parts. *J.S.R.*

How We Talk About Design

At a time when architectural design seems ever lower on clients' agendas, it is ironic that *product* design is enjoying unprecedented acceptance in the business world. It now "speaks" a language business understands: "I think more and more businesses have discovered that design has a bottom-line impact," explains Bruce Nussbaum, a senior editor at *Business Week* who covers design. Over the last few years managers became design converts as they recognized that design was chiefly responsible for the huge success of several prominent products. One example, the Ford Taurus, says Nussbaum, "was a design success, but was also a process success. It proved that if you bring the designers in at the beginning, you get a powerful impact."

Can the lessons of product design be translated to architecture? There are important similarities. Like architects, designers in industry must present issues that are often abstract, intuitive, or anecdotal to people who think in analytical, concrete ways and who look for measurable results. While architects and their clients continue to struggle with these frame-of-reference barriers, the business world is facing them head on.

Designers vs. implementers

Business-oriented clients can discuss design concepts, says John Kao, as long as they recognize that "there will be different stakeholders, different cognitive styles, and different languages that have to be integrated." Kao teaches creativity courses at Harvard Business School. (He says he hates the word creativity, but hasn't found a better one yet.) "You have people who traffic in imagination versus people more rooted in a sensibility of implementation: marshalling resources, being decisive." He notes that all these qualities—otherwise considered strengths in a manager—can "close off the creative process." Successful companies learn to integrate the culture of design with the culture of implementation, says Kao.

[illegible] it's [illegible] Mercury Ford [illegible] they are failures. [illegible] a premium on the [illegible] In another [illegible] developed almost 20 years [illegible] of the graphical user interface (the icons, "desktop," and "folders") that you see on the screens of Macintosh and Windows-type computers. Xerox didn't see a market; Apple Computer did. Indeed, the Macintosh is a triumph of design for ease of use rather than a technological breakthrough.

Some critics have argued that architects need to run their practices much more like clients run their businesses. "That's bad advice," says Bruce Nussbaum. "If you want to run a business, hire a business manager." There's a difference between understanding your client and *being* your client, he says. "You have to understand their needs and culture. Become a Peace Corps volunteer in the business, and build within that culture."

You accomplish this, says Kao, by developing a common language. Designers' input is often seen as more valuable when they help to build innovative team structures that get around the feedback failures innate to a linear engineering-to-marketing-to-design-to-manufacturing process. Thus it is foolish for architects to ignore non-traditional project-delivery methods or business structures (see subsequent stories). Just as important, says Kao, is to help managers recognize that, "too often design gets inundated by operational realities before all the ideas are out." If a client has, as he puts it, "a very narrow definition of design," the designer may have to take steps to change the nature of the dialog. You can't do it in a 15-minute presentation in the manager's office. You might have to go "off-line," as Kao puts it, even working in a separate, neutral place. In presenting ideas, Kao says, the designer "needs to have a sense of theater" to get the manager to look at issues in a less operationally determined light.

Metaphors

"You might have to go off-line."
"The dance of design"
"Improvising a duet."
"Going out to the woodshed."
"A call and response kind of improvisation."
"Starting out with the sheet music."

John Kao

How much design do clients need?

"I see lots of examples where design should be much more central to a company's strategy," notes Kao. A 1993 Roper study commissioned by the AIA showed clients most valued architects for their ability to design new buildings, obtain permits, and do space planning. A common frustration is convincing clients to go beyond these basics to create a special place or signature building. The product-design world struggles with a similar dilemma. Apple's interface was brilliant because it synthesized concepts familiar to non-computer users (file folders, trash cans) into a screen environment that "told" you how to use the unique and productive attributes of the computer.

"Bob," a recently introduced Microsoft interface for home computing, takes things far too literally. It presents an image of a tract-hous living room, in which one opens "file cabinets" and uses the "phone." What it fails to do is show the user how the computer is not like a living room. "Bob is a cartoon idea of how people use these things," says Richard Saul Wurman. (Before embarking on various design and publishing ventures, Wurman wa a practicing architect. He still thinks of himself as one—in the information realm.) He sees parallels to Bob in "architecture as decoration," where the outside often bears little relationship to the interior. "I think buildings should tell you about themselves. The architecture should tell you how to get through it. Transportation and hospitals—public buildings—need this the most. They'r often fixed up by signage."

ls business has discovered, learning to integrate liverse ways of thinking is key to design success. lrchitects can apply these lessons, too.

e hard part: integration

hat the landscape is littered with bad build- gs and failed product designs shows, says ao, that "getting ideas is often the easy rt. Translating them into something that s value is harder." To succeed, he says, is to cus on designing a *process* that works tter. Kao worked with London architect avid Chipperfield to design a demonstration use for an exhibition in Germany that he lls, "the poster child for the new wired ing environment." Kao describes the ocess: "I took the role of the businessman. described as exactly as possible what the quirements of the project were. That may t be the immediate frame of reference of e designer, but the dance of design is ways within constraints. So the manager ust define the constraints. I know very little out formal architecture. What David and I d is comparable to when two jazz musicians o play different instruments come togeth- and improvise a duet. We needed to define project space within which this improvisa- n could occur.

n [jazz legend] Charlie Parker's term, we nt out to the woodshed—we had an envi- nment in which we explored the idea tensively. We had to find out how to listen to ch other. A lot of negotiation took place. It s a call and response kind of improvisation. rt of it was starting out with the sheet usic—the requirements—and then we did me prototypes and renderings, which were way to communicate, but were also a way to tablish a common language that let us come with a category-busting design."

esigners' dysfunctional self-image

is typical of Kao's speech to communicate metaphor and example, and it is done for a rpose. "The use of metaphors is to try and ke creativity tangible, and to help make it rt of an ongoing management agenda." deed, Kao's own agenda is to break down ejudices about design—some of which are inforced by designers themselves. What he nsiders dysfunctional ways of thinking out creativity include the following: "It's a ine spark that can't be taught;" or "it volves the exercise of this kind of mysteri- s skill that must find its own level, like a s that expands to fill the room," or (affect- , Bohemian persona): "We're going to let our hair down. We now have permission to be wacky and unusual." Nussbaum sees a problematic self-image exclusive to architecture. "It has this Great Hero tradition, where an individual makes a fantastic statement by building a drop-dead house. That seems to be the driving force in architecture. That's perfectly OK, but it points you in a direction away from changes in society that you should really grasp and use: downsizing of staff; [the fact that] in hospitals, everyone is walking around with electronic gadgets. Schools are changing for all kinds of reasons. Instead, architects are looking at a vision in their heads of the next big monument. Designers and architects are visual people, and they don't read about business, about politics, about larger social trends. So the information they're getting causes a real disconnect between clients' lives and their lives."

On an abstract level, this "disconnect" does not bother the public. The AIA's Roper poll showed the public has a great respect for architecture. And last year's hugely successful Frank Lloyd Wright exhibit at New York's Museum of Modern Art only confirmed the high esteem in which the great artists of architecture are held. It mattered little to visitors that Wright seemed unable to do a building that didn't leak. But when people actually try and hire an architect, the architect's vision can get in the way. All too often, architects not only see clients as the instrument to realize their personal artistic vision, they foolishly reveal this aspiration. It's the last thing clients want to hear as they view the scary implications of building: an empty bank account; the vagaries of local approvals, construction cost, and delays; the criticism of colleagues if everything doesn't come out right. Certainly clients say again and again that for architects to regard clients as mere patrons is patronizing.

Integration

"Ideas" translated to "value."

"A design success, but also a process success."

"Become a 'Peace Corps' volunteer within the business."

"The building should tell you how to use it."

—Richard Saul Wurman, Bruce Nussbaum, John Kao

Whose aspirations are we realizing?

Successful design architects reverse the equation—their artistic vision provides a superior means for the client to realize her or his aspirations. You could call this a marketing ploy, but even well-known architects with signature styles typically prove to be good listeners, good facilitators of dialog, and good presenters. They know how to sum up inchoate needs; they synthesize aspirations into doable programs. That some have a patrician aura, or a flair for the dramatic often increases client esteem—as long as the designer shows that he or she is listening and responding.

While architects can learn much from design for business, there will always be a debate about the role of design. Judges for the 1994 Industrial Design Excellence Awards, juried by the Industrial Designers Society of America, played out a battle between the esthetic and the pragmatic in the pages of sponsor *Business Week*: "For years, designers who counted themselves as artists demeaned the profession and made it vulnerable to being evaluated on superficial, personal, esthetic criteria," said juror Herb Tyrnaur, professor in the design department of California State University at Long Beach. In debating an award-winning backyard utility shed, Lela Vignelli, president of Vignelli Designs, of New York, replied, "The shed did not rust, did not rot, and cost little. OK, but so what? It looks horrible. It was a good example of the main contrast on the jury—between mere utility vs. illuminated design." *James S. Russell*

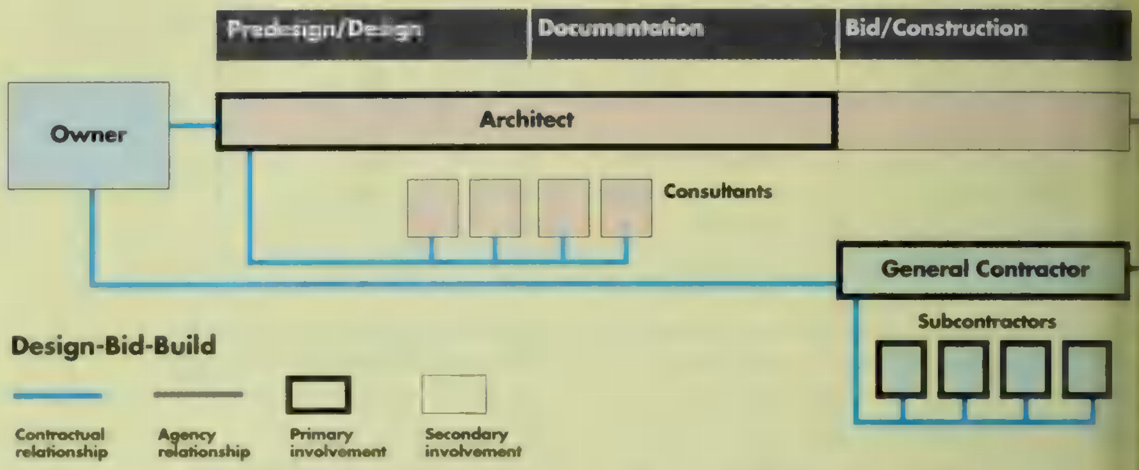
Architects Out of the Loop?

By tinkering with project delivery, owners are expressing their dissatisfaction with business as usual. Do alternatives reduce architects' authority?

By Robert Spencer Barnett

As alternate methods of project delivery gain market share, many architects perceive that their special, collaborative relationship with the client, enjoyed in the traditional design-bid-build delivery method, is being eroded. Can unique qualities of a design—which are often abstract, esthetic, or urbanistic—survive the rough-and-tumble debates over cost or schedule that become part of the process whenever a construction manager or developer is brought in early? Clearly, the answer is yes, but success can only occur when the architect understands the changed dynamics innate to these delivery methods.

The conventional design-bid-build scenario has one thing going for it. The division of responsibility and liability is clear, whereas there are so many permutations of the alternative delivery methods described below and sketched in accompanying charts as to obscure clear lines of authority and liability. Construction Management (CM), design/build, and bridging require extremely close attention to agreements.



Traditional Delivery: *The conventional design-bid-build method offers clear lines of authority and clear divisions of responsibility. It's slow and inefficient, say clients.*

CM: still controversial

Charles B. Thomsen, an early proponent of construction management, recalls one early client comment: "I wouldn't use CM unless I wanted to control time, money and quality." Who wouldn't, of course. Although CM has been around for 25 years, Thomsen, now president of 3D/International, tried to sell contractors and architects on CM when he was with Caudill Rowlett Scott (CRS) in the late '60s. Since then, he says, it's been received as either a "good thing or a communist plot." It's clear that construction management can be a good thing, at least in the private sector where procurement is not restricted to the lowest bidder.

With several notable exceptions (large A/E firms such as Heery & Heery and the former CRS), construction management became the domain of general contractors. As typically structured, a CM would provide preconstruction services such as estimating, scheduling, constructibility reviews and procurement of long-lead items. The CM negotiated a fee for its services and bid out the work to subcontractors and build the project. The form of agreement was the actual cost of the work-plus a fee. Owners and architects benefited from the contractor's input in the preconstruction phases.

This CM scenario can work well when the budget is adequate to the client's program, and the client, architect, and CM together have a clear idea of scope. The process becomes more adversarial when the CM sells its services based on its ability to "value engineer"—i.e., cut money out of the budget. If the client's scope or level of quality has not been made clear or is negotiable, the architect may be put in the position of frequently justifying the "soft" intuitive, abstract, or esthetic elements of a design in the context of "hard" questions of cost and schedule. It is especially frustrating when the architect is placed in the position of redrawing elements of the project to meet an ever-declining budget.

Team members can master this dialog, however, by working with the client to explicitly establish goals and acceptable levels of quality. Many architects prefer working with CMs, who may take on costing and scheduling responsibilities that some firms are uncomfortable with. Tom Farina, a principal with The Hillier Group and former head of it's CM subsidiary, Design Interface, sees construction management as "complementary" to the architect's services.

Not all CMs assume risk

Construction management has more recently evolved in two directions, CM-advisor and CM-constructor. The CM as *constructor* offers the preconstruction services described above for a fee, including the division of fast-track projects into appropriate packages. Th CM is "at risk," meaning it takes on the responsibilities and liabilities of a general contractor in bidding-out and supervising th work. In fast-track projects, the CM may negotiate a guaranteed maximum price (GMP) at, say, the end of the design-develop-ment phase. When documents are complete, subcontracts are bid out. The final price is th actual cost of the work plus the contractor's fee. When this arrangement works well, it permits a very close client, builder, and arch tect relationship that speeds the process an offers few unpleasant surprises.

It's usually not the cheapest method, though Critics claim that CMs set high GMPs so th unexpectedly high sub-bids don't cut into profits. Though the buy out and constructio savings usually accrue mostly to the client, the fact is the client might not have had to give up as as much during design if the GM wasn't padded [see also RECORD, January 1994, pages 30-33].

The CM as *advisor* provides the requisite preconstruction services, and may manage one general contractor or several prime con tractors. The advisor approach is often suit to public-sector projects that require multi prime contracts or competitive bidding. Th CM-advisor is a consultant to the owner,

[illegible] is [illegible] director [illegible] of [illegible] at France [illegible] formerly director of [illegible] The Hillier Group.

wever, and is not at risk and liable for fur-
shing labor and materials. For some
ners, especially those who don't have in-
use staff with construction expertise, there
e advantages. The owner gets the early-
ige price and constructibility input, yet can
ll bid out all parts of the work.

it the CM-advisor role has problems, too.
cause the contractors sign agreements
th the owner and not the CM, multiple
imes can point fingers at the CM or each
ier for schedule or coordination glitches.
hile a general contractor has a legal agree-
nt that gives it the leverage to push a
calcitrant sub to perform, only the owner,
consultation with the CM or the architect,
s this power in the CM-advisor scenario. If
owner is not a skilled or experienced
gotiator, and contractors are aggressive or
ve underbid the project, project quality—
en completion—can suffer.

me see an overlap of the CM-advisor's role
d the architect's role, especially during
nstruction, which is why the AIA since
93 has been urging architects to expand
eir knowledge to take on these services (via
reement documents B141/CMa and
41/ARCH-CM). Owners, however, are
nding mixed signals. By increasingly
oosing early-stage construction-advisory
vices, they are saying that they want the
ecks and balances offered by independent
sign and construction professionals. On the
ier hand, owners that find the single-
irce nature of design/build appealing (see
low), may be amenable to single-source
livery that emphasizes the design side over
build side. Dan Rosenfeld, as an owner's
presentative for both real-estate develop-
and government clients (now he's a
il-estate manager for the city of Los
geles), feels strongly that CMs must be
countable, that they only add value to a
m if they assume risk. For an architect-
1, though, the at-risk scenario adds
nsiderable liability exposure and may
eate conflicts of interest.

eed, achieved through fast tracking and
ncurrent engineering, is probably the
eatest strength of construction manage-
nt. In Texas, where speed is apparently as
ued as size, the Department of Criminal

Risks and Responsibilities in Alternative Project-Delivery Methods

Design-bid-build

- *Predesign:* Architect typically offers predesign services such as programming and site selection.
- *Design:* Architect and consultants provide full design services including construction-cost estimates and schedules. Architect is liable for design efficacy and code compliance.
- *Bid/construction:* Contractor is responsible for construction cost, quality, and schedule. Architect, in consulting role, interprets documents and accepts or rejects construction as complying or not complying with documents.

CM-constructor

- *Predesign:* May be handled by the architect or the CM or both. Sometimes architects are hired by or through the CM.
- *Design:* The CM may assume all or part of the scheduling and cost-estimating tasks. CM advises on constructibility and cost of design elements. If a GMP is set, architect typically must design to meet CM's cost estimates. Architect remains responsible for design efficacy. If fast-tracked, the CM assists in dividing the documents into separately bidable packages.
- *Construction:* CM acts as general contractor. Subcontracts may be negotiated or bid. Architect offers typical observation and interpretive services.

CM-advisor

- *Predesign:* CM may offer many of the predesign services typically supplied by the architect.
- *Design:* The CM may assume all or part of the scheduling and cost-estimating tasks. CM advises on constructibility and cost of design elements. CM can't set a GMP because it is not contractually able to enforce. Architect remains responsible for design efficacy.
- *Bid/construction:* Projects can be fast-tracked, but owner is responsible for coordination of separate construction contracts. CM may offer GC-type services, but as a consultant to the owner. More typically, owner will hire a separate GC. CMs may assume some of architect's typical observation and payment-evaluation duties.

Design/build

- *Predesign:* The design/build entity may put together a variety of experts to address predesign needs.
- *Design:* The architect is hired by the design/build entity, which typically interprets owners needs for designers. In-house "build" experts typically take on schedule, cost, constructibility, and quality-assurance tasks. Design/build entity assumes liability for design efficacy.
- *Construction:* Architects may interpret documents, but most other tasks assumed by design/build entity. Projects are typically fast-tracked.

Bridging

- *Predesign:* May be done by owner's architect, a separate entity, or a program manager.
- *Design/bid:* Owner's architect prepares a detailed scope of work and design. Design/builder completes documents, negotiates price, and builds. Owner's architect is responsible for documents it prepares, but design/builder is responsible for technical efficacy as well as price and schedule.
- *Construction:* Owner's architect acts as agent, interpreting documents. *J. S. R.*

Justice recently designed and constructed 32 new prisons for 10,700 prisoners in less than six months (opposite)! Four construction managers, including Turner, Gilbane, Brown & Root, and Fluor-Daniel, Inc., working under the program management of (and to the designs of) CRSS Constructors and 3D/International, Inc., carried out the program. Though standardized design elements, industrialized building techniques, and expedited approvals all contributed to the extraordinarily speedy completion, the electronic integration of data dramatically shortened the design phases. CAD drawing and specification files were developed, reviewed by CMs and clients, and updated in real time (i.e., participants could view changes on-screen over the network rather than wait for prints). Plotting and distribution of documents also took place over a computer network. E-mail, cellular phones, and laptop computers enhanced response time (by avoiding phone tag). Charles Thomsen reports that a dimensional discrepancy was discovered in structural steel that was already fabricated and on site. In less than two hours a remedy was e-mailed to all 24 sites.

Owners, in choosing construction-advisory services, are saying that they want the checks and balances offered by independent design and construction professionals.

When CM becomes PM

An extension of the CM idea, program managers have become appealing to certain clients. On very large projects with multiple design and construction teams [as at Denver International Airport, RECORD, November 1994, pages 30-37], they offer administrative and technical expertise owners may not have in-house. Even on small projects, program-[illegible] teams may offer services that [illegible] smaller) staff can't [illegible] an overall project [illegible] costing and scheduling [illegible] management. Many [illegible] design tasks such as site selection and programming. Some may even establish early design concepts. PM teams may include architects, but are often made up only of engineers and development, construction, or real-estate professionals. The result may be a clear and well-thought-out program, scope, and budget for the architect to work with. Or the architect could be faced with design tasks that are process- or maintenance-oriented, and don't allow the architect-client give and take that can improve the design.

Like CM-advisors, program managers are not-at-risk consultants. Chris Leyenberger, first an architect, then a construction manager, now a program manager with Bovis Management Systems, sees the program manager role as critical for establishing an appropriate organization and process prior to initiating a project. Architects oriented to the process of managing design and construction can certainly take on program-management tasks. Or a well-executed program-management scheme can permit the architect to do what she or he does best: design.

The design/build dilemma

Architects and engineers initially resisted design/build because it put the contractor in the driver's seat. Contractors who had hired a few designers initially marketed it as a means for owners to skip the complexities inherent in separate design and construction entities. Design/builders are still very strong in simple, commodity-type structures such as warehouses and pre-engineered strip-retail centers. In recent years, clients have tried to bring the advantages of design/build (an integrated, single-source team) to larger and more complex projects—with mixed results. The architect is typically concerned that the process puts the contractor between the architect and the owner, with the result that process issues—schedule, cost, product availability—drive the project more than the client's long-term needs do.

Dan Rosenfeld, former Deputy Director of California's Department of General Services, promoted design/build for state projects because "the old method simply didn't work. The traditional design-bid-build projects took up to 10 years to complete, cost $350 per square foot, and often yielded obsolete facilities." He found that a cost-driven design/build approach used for simple, utilitarian buildings, produced "the worst acceptable design." The quality-driven design/build competition approach, where design/build teams submitted design proposals to meet the state's budgetary and program requirements, was used for "signature" urban projects. Although the process produced "great designs and great teams," Rosenfeld says, "the rules discouraged meaningful interaction between client and architect during the schematic design phase."

One answer: design/build competitions

Rosenfeld's qualms notwithstanding, public agencies have continued to experiment with "quality-driven" design/build on important public projects (especially GSA, see RECOR August 1994, pages 24-27, and February 1995, pages 28-29]. Typically, a general contractor and design team are led by a developer, which not only provides expertise but may take an equity stake in the project (leasing the facility to the public entity for, say, 30 years). The team submits to a selection committee its technical qualifications ar a highly developed design.

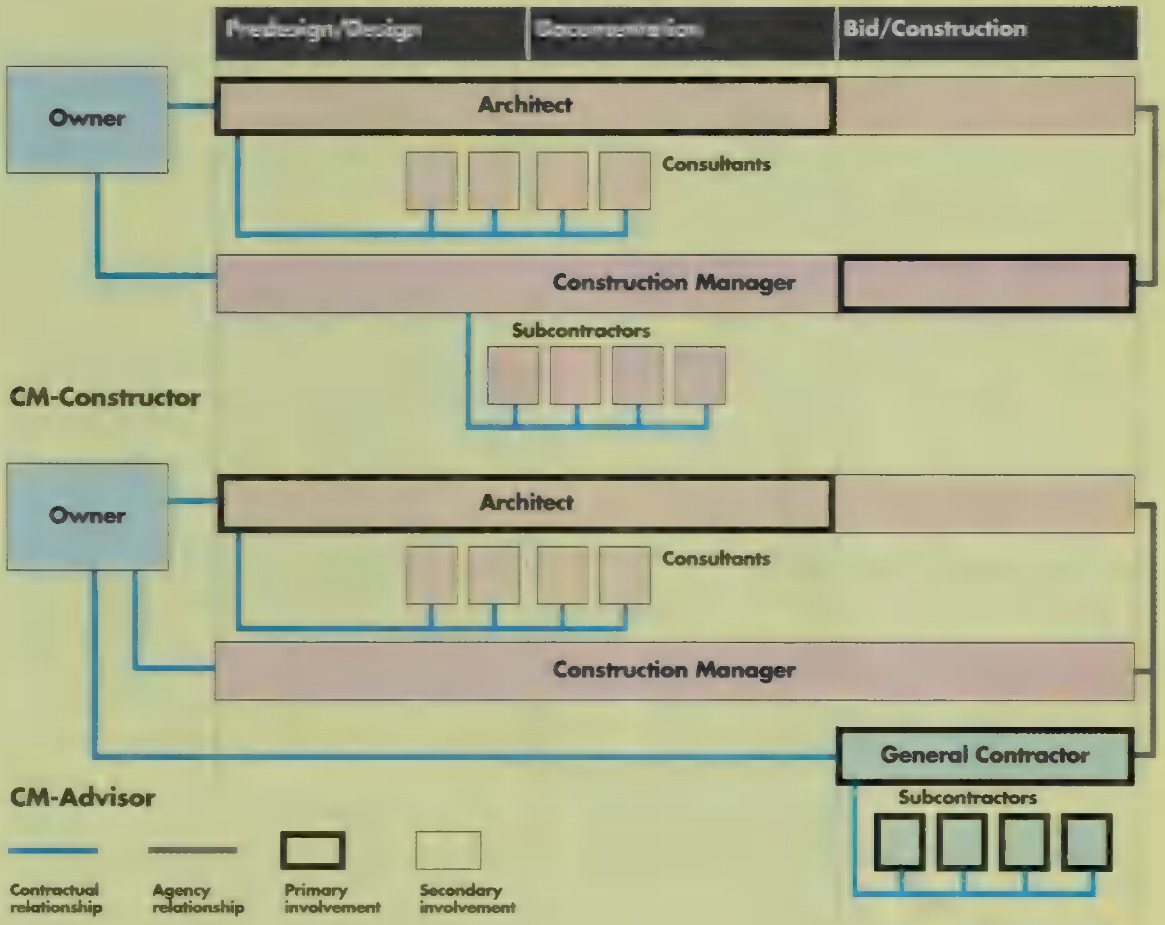
Because of their high profile and potentiall conflicting selection criteria, these competitions can be controversial [RECORD, Augus 1988, pages 46-49]. What if, for example, th owner likes the design team, but is unhapp with the contractor? Though compensation for competing teams is now the norm, desig ers usually incur expenses well in excess of their stipend, a situation that typically excludes all but the largest, most well estal lished firms.

The scope definition prepared by the owne prior to the competition is also crucial to th success of the project. Two high-profile esign/build projects are revealing. The cope document for the Harold Washington ibrary, in Chicago, was assembled by dward C. Wundrum, a competition advisor. t included a materials list prepared by the brary that virtually guaranteed the building ould have the monumental quality of an era efore half-inch gypsum board replaced ree-coat plaster and 3/4-in. stone veneer eplaced load-bearing masonry. 3D/Interna- onal, which prepared the criteria for the the hurgood Marshall Judiciary Building, in Vashington, D.C., stipulated that the build- ng should endure for 200 years. Though such tandards can't guarantee excellence, they ertainly make it possible.

he owner in both cases was a public agency cting on behalf of a separate user. In com- eting for the Harold Washington Library, aul Steinbrecher, of design architect Iammond Beeby and Babka, says the firm cused on the user—the library staff—as the ue client. He believes that their team won e competition because they had addressed e library planning issues better than their ompetitors.

ohn Lee, of John M. Y. Lee Architects, says he developer is the key, to bang the tables nd direct the meetings." (His firm, with dward Larrabee Barnes, designed the hurgood Marshall Judiciary Building.) In hicago, weekly meetings of the chief execu- ves of the library's SEBUS consortium which included developer U.S. Equities, uilder Schal, and architect A. Epstein & ons as well as Hammond Beeby and Babka) esolved internal issues. Then SEBUS would eet with the city, which functioned as an ppellate court." In these cases, the archi- ect was farther down the hierarchy of review nd decision-making than would have been e case with a more traditional delivery ethod, yet neither architect felt cut off from e client, as is often the case with esign/build in its more rudimentary forms.

nother reason the projects worked is that oth were well budgeted. Each was more an $100-million and was designed and con- ructed in about three years (not counting e scope-development stage and design- am selection period, both considerably nger than the traditional method). And the



Two ways to CM: *Many architects prefer the close working relationship that's possible in a CM-constructor process. When the CM is well-versed in technologically demanding building types, the greater control that the owner can exercise over scope and time may make up for the somewhat higher costs this technique may entail. The "advisor" method adds another consultant layer to the process—useful to those clients seeking lowest construction cost (through bidding) while benefiting from construction expertise during the design process. A CM process was used to build thousands of new jail cells for 24 Texas correctional facilities in a matter of months. Shown in lower left of image is a 334-bed dormitory addition to the Mark W. Stiles unit in Beaumont. Architect is CRSS+3DI.*

© Skycam Photography

process did permit rethinking as clients became more acquainted with the competition-winning schemes. Both architects reported changes galore. In Chicago, the contract documents, which consisted of over 80 sheets of competition drawings prepared by the design team and the design brief issued by the City, were the baseline against which all changes were evaluated. According to Steinbrecher, the process permitted reallocation of resources as long as the budget wasn't exceeded. Where scope changes clearly exceed the budget, however, the design/build process may fail to address the cost issues, as in GSA's courthouse-building program.

Bridging: best of both worlds?

Fritz Kastner explains that client UCLA was frustrated "at continually being taken to the cleaners by change-order artists." Thus, Kastner's firm, Stegeman and Kastner, a program manager, is overseeing 908 off campus-housing units for students with families using a hybrid of traditional delivery and design/build. Under this method, the university hired an architect, with the full complement of consultants, to prepare documents to design-development level. At the same time, the client, using quality-based selection, invited four design/build teams of architects, engineers, and contractors to submit lump-sum bids based on these documents. Once selected, the design/build team became responsible for the completion of the documents and construction of the project. The key to success, according to Kastner, was to develop bid documents with very little "wiggle room," but which invited the contractor to [illegible] its "innovation and expertise" to [illegible] and time savings.

This [illegible] "bridging," and its promoted [illegible] Charles [illegible]sen and Heery, which [illegible] According [illegible] Thomsen, bridging "combines the advantages of design/build with the traditional strengths of competitive bidding. The traditional process hinders the contractor's collaboration with the architects—but design/build hinders the client's collaboration."

This lack of interaction led Rosenfeld, when he was at California's GSA, to a similar approach which he describes as "modified design/build." (He actually adopted a three-tiered approach, in which the delivery method was matched with the state's objectives.) A design team, selected on the basis of quality, worked directly with the state to produce 20-percent-complete construction documents for bid. The balance of the project delivery was handled by a design/build team. Like Thomsen, Rosenfeld concludes that this two-step process provides the "best of both in terms of cost and quality." The down side of this approach is that the succeeding team, if it low-balled its bid, has an incentive to blame the designers for flaws or overruns. Exactly this problem created havoc at the Denver International Airport. Thomsen replies that bridging, in essence, is widely and successfully applied internationally.

A couple of key aspects of bridging may trouble tradition-minded architects. One, is that Thomsen thinks the owner should own the documents. Then the owner can take the documents to a different design/builder if the original entity fails to meet its contractual obligations. Further, Thomsen sees bridging as delivering a product in which a higher standard might be applied than the usual "standard of care" that courts enforce when disputes about architectural design arise. If the design/build contractor fails to meet the design requirements of the design architect's contract documents, Thomsen feels the owner can force the design/builder to fix it at its cost. In traditional methods, the owner is typically responsible for additional construction costs, though the architect may have to redesign without additional compensation.

"The traditional design-bid-build projects took up to 10 years to complete, cost $350 per square foot, and often yielded obsolete facilities."—Dan Rosenfeld

Learning to collaborate

At base, the search for the perfect project-delivery method comes from the failure of older methods to meet owners' higher expectations. Projects are growing in complexity and clients want them sooner. At the same time, they don't want to pay premiums. In traditional methods, the client would seek the best design from the architect and the lowest cost from the contractor. There is an adversarial nature to this method that was supposed to work to the client's advantage. With today's more complex building technologies, contractor quality and delivery are as important as price, and the architect must inevitably focus more on what's buildable by the contractor.

Architects can focus too much on specific delivery methods, according to those long involved in improving the construction process, such as Thomsen or management consultant Weld Coxe. What's more important is improving collaboration among design and construction-team members. Coxe and Thomsen are proponents of partnering. "It focuses on opening the channels of communication, installing systems for resolving problems, and defining project goals for those who must work together," says Thomsen. Coxe suggests that the current interest in design/build is "nothing more than client-driven partnering." With Mary Hayden, Coxe conducted a study of design and construction practice in eastern and western Europe, North America, and East Asia for the International Union of Architects (UIA). They concluded that "informed clients continue to demonstrate a preference for strong, independent (influential) architects to be on their side through the building process." They perceived client pressure "to improve the working relationship between designers and contractors without subsuming one to the other."

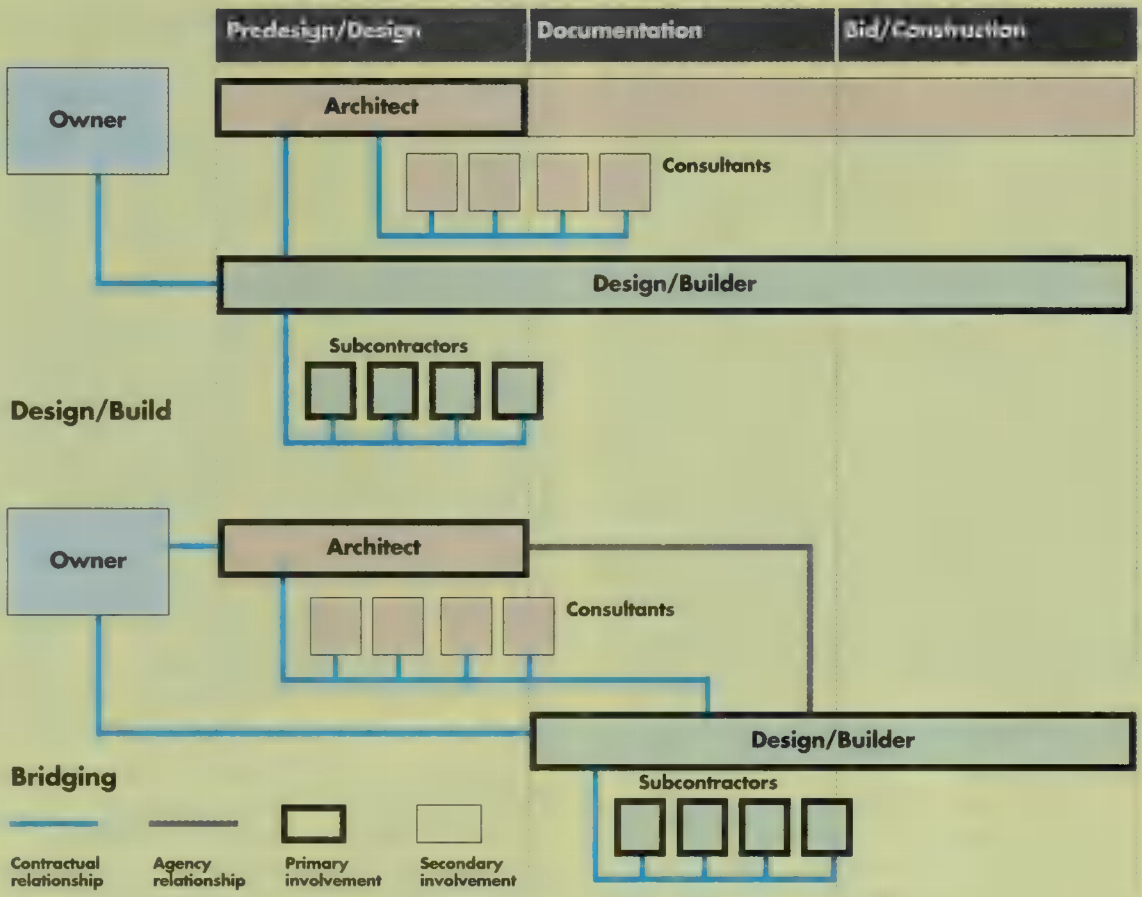
This sentiment is repeated by owners, architects, and contractors alike. Dan Rosenfeld, who once was a project executive for the real-estate-development firm Cadillac-Fairview, says that an owner will make good decisions if he or she is being advised from "day one by reasonably qualified architects and contractors." The system of checks and balances where the architect typically advocates quality and the contractor advocates cost consciousness is welcomed by the owner who wants the responsibility for decision-making. Alan Chimacoff, Director of Design for The Hillier Group uses adjectives such as "intelligent, cooperative, strong, concerned, clear, and productive" to describe the attributes of members of owner-architect-contractor teams that produce the highest quality work. While these attributes might describe any successful project-delivery method, the point of partnering is to focus specifically on developing these attributes, and on resolving disputes at the earliest possible time.

Partnering is intended to reward independence and competence as long as it is combined with open mindedness and respect. Partnering sessions proceed from the beginning of the project, so that the groundwork is laid for day-to-day conflict resolution.

Taking responsibility is key

From the Jersey Devil—a renegade team of architect-builders who literally move in with the owner to design and construct a building—to the "green eyeshade" drafting room employees of the pre-engineered building "package dealer" (the 1960s precursor of today's integrated design/build firms), project-delivery methods continue to proliferate. The pros and cons of each methods can boggle the mind of clients. Architects may find themselves in the position of not only proving the worth of their own firm, but of the delivery method or methods that it prefers. While many architects would like fewer project-delivery choices, it's clear that clients will continue to consider new methods as long as existing ones aren't satisfactory.

Pessimists see each permutation as a road to architect marginalization, even extinction. After studying world trends in private practice, Weld Coxe concludes: "There is a close relationship between the degree of responsibility architects accept for the fulfillment of their designs, and the social and economic status of architects in the community or society in which they practice." ■



Two ways to design/build: *Though the advantage of design/build for the owner is a single source for all services, the disadvantage for the architect is that he or she is working for the design/builder, and not the client directly (top). Bridging seeks to solve that problem, by having an "owner's architect" that is responsible for interpreting the owner's needs into a bidable combination of drawings and performance specifications. Charles Thomsen feels that this technique works best when the owner's architect contracts directly with the owner, not the design/build entity. Though consultants are shown as shared in the above diagram, some would argue that the design/build team should have its own consultants.*

End of the Pure Design Firm?

Multi-discipline firms, with their focus on client service and efficient delivery, have much to teach all-design firms. But don't count design firms out.

By Sheri Olson

Some pundits have predicted the virtual end of the architectural-design firm. Owners seek a single-source of design services, not a long line of consultants or a complex joint venture. A practice that doesn't offer extremely specialized services or a huge spectrum of services isn't appealing to today's performance-oriented client, these critics say. *Engineering News-Record's* top 500 design firms are consistently dominated by Architect/Engineers or Architect/Engineer/Constructors. Will multi-service firms come to dominate the design marketplace? And how will all-architecture practices—as traditionally defined—fare?

"High-design firms will always be around, but the majority of us had better face up to the fact that we're not Frank Lloyd Wright," explains Robert Workman, principal of BSW International, the Oklahoma based A/E responsible for over 2,000 Wal-Marts. Design is not a mantra at BSW; service is. "Sure you have to have quality design, it's a baseline expectation," says Workman, "but we also deliver on time and on budget." Unabashedly bottom-line oriented, it's important to the firm that everyone in the building cycle be profitable. "We would like to provide all the services to meet the corporate objectives for a building program," says Workman. "If we don't make good business decisions, it could be crippling for our clients, so a major priority is to be healthy and stable." The firm wouldn't reveal profits, but a *Fortune* article applauding BSW's success estimated 1993 billings at over $50 million.

In embracing the values of its clients over the often-abstract ones of the profession, the firm is doing what many think more practices should do. BSW places heavy emphasis on process, partly out of necessity, explains Workman. "When you deliver hundreds of projects a year, any inefficiencies in the system are magnified." While all architects seek repeat business, BSW makes it an art form. For its chain-store clients, a specialized [illegible] professionals, architects, [illegible] ruction professionals [illegible] project) designs a [illegible] *process* (integrating issues of design, repeatability, and cost) based on the development of a prototype.

The firm believes it's offering what design professionals too frequently ignore. According to Workman, "The reason architects are looked on as a necessary evil, rather than as an answer, is that clients don't see the bottom line value of architects. This is due to the profession's focus on things architects think are important, like design, not on what the client wants, which is usually much more." James Hohenstein, senior vice president, at HDR, Inc., an Omaha-based E/A firm represents many multi-discipline firms when he says, "We don't see ourselves as high design." (Henningson, Durham & Richardson, Inc., the architectural division of the company, specializes in health care, justice, science, and industrial facilities.) "Our values are based on service to our clients and client satisfaction."

Doing delivery better

The traditional separation of architecture, engineering, and construction began to seem archaic as the inflation and high interest rates of the 1970s drove the cost of delay into the stratosphere. A/Es and design/builders seemed better positioned to make fast-track projects work. Today, neither rates nor inflation drive fast-track: business imperatives do. Product cycles are so short in highly competitive fields like pharmaceuticals and software that companies can't wait years to bring a facility on-line. New York City-based Haines Lundberg Waehler (HLW) credits its tightly integrated multi-discipline process for getting a technically sophisticated one-million-sq-ft drug discovery lab for Schering-Plough from design to completion in just 48 months. Only the sketchiest parti was developed before the building's complex program was divided into components, which were designed concurrently, then put back together. In terms of design, "It's no longer either/or, it's and/both," says design principal Ted Hammer. "Client's expectations are higher than ever before. They want design on budget and on time."

To meet today's crushing schedules, Heery International, Inc., an Atlanta-based architecture, engineering, and planning firm, relies extensively on computers for analysis, programming, and design as well as managing, scheduling, and costing. The firm can offer super-fast-track service because in-house architect/engineer/consultant teams are always in place and ready to go. With restructuring, total-quality management, and other new management techniques sweeping the business world, clients expect their design teams to get on board. Large A/E and E/A firms are restructuring themselves, too, not only to meld with new company cultures, but to manage the work process and flow of information better.

Management of information—especially electronic information—has become a major stumbling block on large, complicated projects, says electronic data-management expert Kristine Fallon. She sees a significant advantage for multi-service firms, because they can avoid handling data manually or converting it to different filing or software systems. Other A/Es claim a more prosaic communications advantage: physical proximity of team members is still the most efficient means of "data exchange."

Managing complexity

Successfully handling the complexity of many building types also can be an advantage for delivery-oriented multidisciplinary firms. On pharmaceutical projects, the requirements of the sophisticated technology are a high priority, so it's important for the architects to be skilled in the deployment of fume hoods and animal-holding areas. It also falls on the design team, HLW's Hammer says, to be "people advocates"—balancing the high-cost needs of technology with the more intuitive and difficult-to-define needs of the people who work in the facility. A project's public image is also important to clients who realize the value of being sensitive to the community and the environment.

Another appealing aspect of multidisciplinary firms, says Hammer, is that they provide a single source of responsibility, which is increasingly important to those clients that have shrunk their in-house design-management capability over the last few years. In offering a wider range of services to such clients, Hammer sees his firm as redefining design. "It's not just another pretty space." Indeed, a reason the biggest design firms are

[illegible] teacher, and writer [illegible] New York City.

multi-discipline is that they bill for far more than traditional services.

Split loyalties

Some say that a firm can take a service orientation too far. John Gaunt, formerly a CEO at Ellerbe Becket, in Minneapolis, and now dean of architecture at the University of Kansas, finds "something dispiriting" about firms focused primarily on financial objectives. He believes the challenge for architects and engineers is to help communities balance growth with quality of life, and "replace what is now expediency with value." Robert Gutman, who has long studied architectural practice at Princeton, adds, "There will always be clients with a limited understanding of design, just as there will always be clients who have a genuine sensibility for design and a belief that it has market value." He warns, "A profession needs to continue to emphasize its core skill or it risks losing its identity; for architects this is design."

The place of design within the multi-discipline firm is especially difficult to resolve, however, because such firms have split loyalties.

•*Engineers vs. architects:* Though compensation and benefits tend to be above average, A/E and E/A firms have trouble hiring the best talent, according to Weld Coxe, a principal of The Coxe Group, a management consultant serving design firms. "Architect-dominated A/E firms have trouble hiring and retaining top-flight engineers, and engineer-dominated E/A firms have trouble retaining top-flight architects," he explains. Dana Cuff, a professor at UCLA who has researched and written on architectural practice, sees cultural differences that spring from their differing training. Engineers in the U.S. seem to be less concerned with design than their European counterparts, who don't have the same tradition of educational separation.

Cuff sees a faulty perception that "if you're nterested in engineering, you can't possibly be interested in architecture." Instead, when engineers join with architects "the E tends to skew the A," says Cuff. She believes that "engineers don't become strong design advocates." The difference between A/Es and E/As, "has to do with the importance of

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Schools as information infrastructure: *Can an engineering-driven firm known for its highway and airport work do schools? Yes, claims E/A/P Greiner, because its infrastructure experience gives it an edge in integrating the new telecommunications that schools increasingly demand. Additions and renovations for Penn High School, Mishawaka, Ind. (left), included a fiber-optic network with local panels to operate a variety of media. A similar system was provided at the new Rockford (Mich.) High School (above).*

© Jon B. Petersen

Taking Sam Walton Seriously: *BSW principal Robert Workman says Wal-Mart's Sam Walton came to the firm complaining that he couldn't find an architect who would take his projects seriously. BSW obliged, even though the cookie-cutter designs and the store's out-of-town locations draw fire not only from fellow architects, but, increasingly, from historic preservationists and planners. Clients, though, continue to seek what BSW offers; it has signed up Circuit City, Home Depot, and Taco Bell. Above: the firm's Lawrence, Kans., "Eco-Mart."*

©Jeff Goldberg/Esto

Health Care's Higher Profile: *With health-care providers increasingly competing for business, hospitals now seek amenities such as this patient-welcoming entrance at the Don Imus/WFAN Pediatric Center at the Hackensack (N.J.) Medical Center. Ralph Johnson, of A/E Perkins & Will, comments, "While museums and single-family houses have always benefited from good design, now these institutional buildings—the type of large-scale projects A/E firms usually get—are benefiting as well."*

With restructuring sweeping the business world, A/E and E/A firms are getting on board, not only to meld with new company cultures, but to better manage work process and information flow.

architecture to the people who run the show," says Stan Lorch, an assistant vice president at E/A Parsons Brinckerhoff, Inc., in New York City.

▪*Attitude toward growth:* Growth is important to Parsons Brinckerhoff, explains Lorch, which is not the case with most all-architecture or all-engineering firms that don't want to take on the management and business-development headaches or face the loss of design control that growth entails. The administration of a large, growing firm is a monumental task, says Lorch: "Training is going on all the time to integrate new people into the culture of the firm."

Size is one of the reasons why Kohn Pedersen Fox Associates decided early on not to go the multi-service route. "We were not looking to be as large as most A/E firms," explains Eugene Kohn. The decision also had to do with the firm's location in New York City, where, Kohn believes, the engineering consultants are outstanding in their own right, and where A/E firms are less established. "We felt we would get the best advice and talent from independent consultants outside the firm, and could even benefit from their experience gained from working for other architects."

For some firms, bridging the culture gulf between architects and engineers becomes a way to address clients' changing design requirements. HLW provides formal training in conflict resolution, focusing on the different ways architects and engineers think, talk, and work. "This is not about feeling warm and fuzzy," partner Ted Hammer emphasizes. "It's about the work turning out better." He calls it "our number-one training issue for the entire firm in 1995." The effort should translate into more closely integrated design concepts and well-coordinated documents, notes Hammer. Architects coordinate the firm's "resident experts," a collection of specialists at the leading edge of new technology.

Design's improving market value

[illegible] A firms, while maintaining their [illegible] and delivery, see design [illegible] increasingly important. Says Coxe, [illegible] quality design; they [illegible] about it, and they're willing to seek it out." Ralph Johnson, design principal at A/E Perkins & Will, says his firm has prospered because "there is more emphasis on design today because of an increased awareness in the media." (Pei Cobb Freed's Holocaust Memorial, for example, won a design award sponsored by *Business Week.*)

Hohenstein, of HDR, believes health-care clients look for higher emphasis on design because they have to appeal to the public. "The consumer for a hospital used to be the doctors; now it's the outpatients." Perkins & Will also adjusted their emphasis in response to marketplace demands, particularly in health care and education "Hospitals are marketing design and a better health-care environment," says Johnson. Image is also increasingly important for institutional clients, like universities, who see design as a means to improve their reputation.

Changing expectations for public design has altered attitudes toward two A/E strongholds, sports arenas and convention centers. Richard Farnan, executive vice president and director of architectural practice at the Kansas City-based E/A/Planner HNTB, believes these projects are no longer market-driven but image-driven. "Over the past several years, there has been a reduction in attendance and demand for convention centers," he explains, "but operators are still planning expansions as cities compete with each other." Instead of blank convention-center boxes and arenas that resembled freeway off-ramps, cities have increasingly awarded commissions to designers that could evoke old-time ballparks and create unique settings for meetings.

Design architects such as Pei Cobb Freed and Kohn Pedersen Fox, teamed with convention-center specialists, have taken over much of the turf once held by A/Es. On the other hand, a small group of A/Es (all based in Kansas City), by increasing their design profile and making the most of their multidisciplinary approach, have held onto much of the sports-facility work. HNTB's architects and engineers collaborate early on projects. The firm can evaluate a design concept's impact on the costly structural system, for example—or reconsider how alternatives to typical roof trusses might improve the interior space. An interdisciplinary approach is also useful where repetition of a carefully honed prototype is in order, prisons for example. Currently HNTB is also developing a prototypical classroom.

Design culture in the multi-service firm

"Design," explains Heery vice president and lead designer Chris Knight, "is a basic service, which underlies all of our services, whether architecture or engineering." He believes the market rewards excellence. Concrete measures of excellence in architecture, however, remain elusive. For all the square footage multi-discipline firms build, prestigious awards and prominent design-feature publications often elude them. Because of the high cost of health-care facilities, says HDR's Hohenstein, the firm's emphasis on design is placed on the functional side: in efficient layout, planning, and detailing—all areas that of themselves infrequently generate design awards or publication by journals.

On the other hand, multi-discipline firms can't consistently show that client-driven design and process has produced higher satisfaction. Robert Gutman believes it's "important to clarify for an audience of clients, and even for architects themselves, what is meant by good design." He has found that some firms are very articulate about good design, but the work does not always reflect it as a value.

To become more competitive, some A/E and E/A firms attempt to raise their design reputation, only to find that it's difficult both to build and maintain. To stay in business, large firms have to keep work flowing in, not all of it ideal. John Gaunt, explains, "When the financial crunch is on, there is an inevitable tendency to expediency rather than to sacrifice for design. It is problematic for these firms to consistently maintain an overall hig quality of design."

Many firms have tried to graft "name" designers to stodgy firms. There are many unheralded failures, but there are success stories too, such as Cesar Pelli at Gruen or Helmut Jahn at Murphy/Jahn. Perkins & Will successfully raised its design profile wit the help of designer Ralph Johnson. The Chicago-based A/E firm's success depended on several factors: changes in the firm's management structure, the designer's role within the firm, and the designer's role on the project team. "When I started with the firm in the mid-'70s there were no designers at the officer level," recalls Johnson. "It was a completely management-oriented structure." As a top executive, Johnson now is in a position to advocate design (and to show design sells). Creating teams led by project architects, not project managers, helped to decrease the polarization between the design and management sides. The design-studio system is also team-oriented, not departmental, "which is good business as well as a good experience for younger people," adds Johnson.

Are all-design firms making inroads?
Dana Cuff believes the market for architectural services currently resembles a "dumbbell." Increasingly specialized firms occupy one end and multi-service firms occupy the other. She says that joint ventures of highly qualified architects and consultants are competing successfully against A/Es and E/As. She believes that multi-service firms will have to develop design abilities more fully. Adds Coxe, "really sophisticated clients are now joint venturing a design firm with a construction manager." Coxe believes that "strong idea" firms are increasing market share at the expense of delivery-oriented A/E and E/A firms.

Institutional and governmental clients, who traditionally value single-source responsibility, are also less likely to turn to A/Es because of regulations that encourage the use of minority-owned and women-owned firms. HNTB's Farnan believes that many clients today want every member of the team to have the best possible credentials. Multi-discipline firms can't usually put together teams where everyone is at the top of their field. Some A/Es have also found themselves facing more competition in building types they have traditionally dominated, like health care, as the recession drove all-architect firms to seek new markets. Clearly single-discipline firms have much to learn from the business orientation of A/Es and E/As. It's also clear that multi-discipline firms are already learning from the strong design firms. ■

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Computer-Generated: *Heery International relies on sophisticated computer networks to keep up with the pace of change in technology used by health-care clients like the Wolfson's Children's Hospital, in Jacksonville, Fla.*

Patient Focused: *Design for patients is not unique to American hospital projects. Witness the dramatic atrium at HDR's King Abdulazie University Hospital, Jeddah, Saudi Arabia. The firm says it never sacrifices good planning to an exterior esthetic.*

© Rion Rizzo

© Peter Paige

Pharmaceuticals' Fast Track: *Rapid facilities change at drug companies challenges firms like Haines Lundberg Waehler to deliver technology-intensive projects quickly. At the same time, offering facilities that attract and retain skilled scientists and technicians is a priority for many clients. Principal Ted Hammer refers to this balance as "high-tech humanism." Pharmaceutical Development Facility (left) and Drug Discovery Center (above), both for Schering-Plough, in Kenilworth, N.J.*

Finding a Needle in the On-Line Haystack

By Ralph Grabowski

Architects have access to a wealth of information, and none of it is in their office. It's at the end of the phone line, and the cost of this information is significantly cheaper than a massive printed library of perpetually out-of-date technical manuals. Your computer can connect via phone line to vast libraries in minutes. Instead of shelves of binders, you can "download"—that is deliver to your own computer—only the industry standard or product spec you need. And you can use electronic mail (e-mail) to communicate. It's much cheaper and less wasteful than faxes. And easy access to electronic forums and "chat" rooms permits on-line users to debate issues, get technical questions answered, even place or answer classified ads.

This is the much-touted "information superhighway," though today it's more like a service road. For architects, many of the advantages of on-line services still lie in the future. But with the low cost of modems and services, and the steadily improving quality of information, being on-line will soon become as mandatory for firms as a fax machine.

Info on-ramps

To get online, you need to work through a service provider. If you work for a large firm, you probably don't have to worry about that: your computer is connected to an in-house network, which in turn is connected to the electronic world. In any case, you choose to work through a commercial or private bulletin-board service (BBS) or connect directly to the Internet:

- *Commercial general-interest BBS*: Services like CompuServe, America OnLine, Prodigy, Delphi, GEnie, and eWorld provide thousands of special-interest discussion areas, as well as e-mail, daily information updates, and limited Internet access.
- *Private BBS*: These limited-focus services provide group chats, e-mail, and file downloads. Some are linked to each other through BBS interconnections like FidoNet. AIAOn Line is an example of a small, private BBS.
- *Internet:* The Internet is not a single service, but rather an informal interconnection between corporate and university computers throughout the world. The Internet provides the largest database of information, but it has, until recently, been oriented to research and academic users.

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On private and commercial BBSs, you can read and save text on-screen. To look at images, you'll have to download them, and use a "viewer" program (usually free). On Internet World Wide Web sites, you can view high-quality graphics on-line.

To get online, you need three pieces of computer equipment:

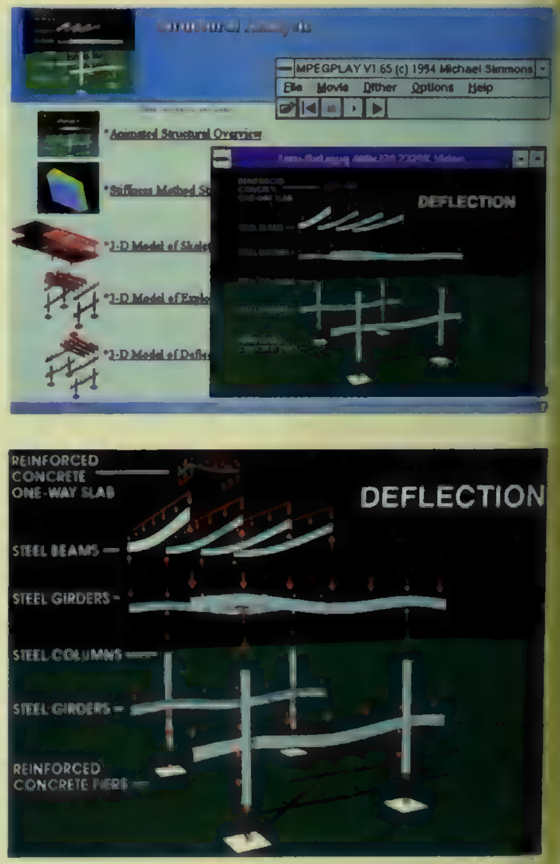
- *Computer:* Any computer will do; an 80386 CPU is needed for high-speed (9,600 baud or faster) modems.
- *Modem:* Buy the fastest modem that your service provider supports. Today, that's 9,600 or 14,000 baud. Don't buy a faster modem since the price of faster modems is always coming down. I prefer an external modem since it can be easily moved between computers.
- *Software:* It's best to have software specific to each service; fortunately, most service providers give it away. The shareware ProComm (that I use) and commercial packages, such as CrossTalk, can be made to work with any BBS.

What's on private BBSs

The chart opposite was up-to-date at press time, but services and price change often.

- *A-E Resource* offers access to the architecture and engineering sections of the Commerce Business Daily (CBD), on-line dialogs (conferences) and forums, and 6,839 files to download. When we visited the BBS, the CBD was current but the "Newsletter of Interest to Our Callers" hadn't been updated in eight months.
- *AE&C InfoNet*, in addition to posting the CBD, tracks all awards (see file awards94.txt for 1994). The BBS stores professional newsletters, the Design Firm Cost Index, the Department of Commerce's Design & Construction Industry Outlook, and a Human Resources Center. When we visited the BBS, we were caller 11,106. The American Consulting Engineers Council newsletter was up to date. Scanning the files area, we noted 50 to 60 CBD downloads daily.
- *AIA OnLine* is strongest in its searchable databases. It offers CBD access, product information, directories for architects and consultants, and employment referrals. MasterSpec tutorials, NIBS guide specifications, and ASTM abstracts are also accessible. Some advertised services, like publication indexes and downloadable cost information, are not available. The interface is non-standard, but does the job once you get used to it. Product information is still sketchy. Forums and roundtables aren't attracting much participation yet.

Architecture On Line bills itself as an "electronic journal." This brand-new product of Princeton Architectural Press is oriented to "the ideas and events in architecture today." Users can read and download articles, submit articles, participate in discussion groups, and



The Columbia University schools of architec [illegible] engineering have put interactive [illegible] presentations illustrating famous [illegible] architecture on the World Wide We [illegible] c.columbia.edu/~archpub/BT/B [illegible] Above: Mies' Farnsworth House.

With the low cost of modems and services, and the steadily improving quality of information, being on-line will soon become as mandatory for firms as a fax machine.

	Private BBSs						Consumer-Oriented BBSs	
	AIAOnline	**Architecture Online**	**AE&C InfoNet**	**A-E Resource**	**ReproCAD Network**	**SourceNet**	**America OnLine**	**CompuServe**
Features	CBD and other business-development leads, interest-area forums and roundtables, job listings, construction cost info, publication indexes	Online architectural journal; architectural information resource	CBD, A/E industry information, shareware, ACEC bulletins, Harper & Shuman bulletins	CBD, CAD and graphics files; product demos	Long-distance reprographic and file exchange information with access to service bureaus in the U.S. and Canada	Canadian government, corporate, real-estate, jobs, and product info	Forums on architecture, CAD, and related fields; shareware	CAD vendor forums;.shareware
Cost	$9.00 per hour	$30 per year	$240 per year	$95 per year	Free	Free; some surcharged databases	$9.95 per month; $3.50 per hour after 5 hours; some surcharges	$9.95 per month; $4.80 per hour; many surcharges
Free Trial	No	NA	30 minutes	15 days		Yes	10 hours	$25 credit or 1 month free.
Max. Baud	14,400	28,800	14,400	14,400	14,400	NA	14,400	14,400
Hardware/OS	Mac, DOS, Windows	Mac, Windows	Any	Any	Mac, PC	NA	Mac, DOS, Windows	All personal computers
Operator	Telebuild LC division of Telescan	Princeton Architectural Press	Claire Ross Organization	Parallel Resources	ReproCAD Distributors	PGA Canada	America OnLine	H&R Block
Internet Email Address	theaia@aol.com	sales@pap.designsys.com	NA	NA	NA	NA	NA	70006.101@ compuserve.com
Voice	800/864-7753	212/995-9620	602/488-5440	205/821-9000	800/354-5304	416/269-1507 X158	800/827-6364	800/848-8990
Fax	202/626-7420	212/995-9454		205/821-9700	NA	NA	NA	NA
Address	1735 New York Avenue NW, Washington DC 20006-5292	37 East 7th Street, New York NY 10003	PO Box 4808, Cave Creek, AZ 85331	703 East Glenn Avenue, PO Box 2488, Auburn, AL 36831	3650 Mt. Diablo Blvd. #200 Lafayette, CA 94549	NA	8619 Westwood Center Drive, Vienna VA 22182-2285	PO Box 20212, Columbus OH 43220

browse facsimiles of academic journals, such as the *Journal of the Society of Architectural Historians.*

Two services take a different path. The ReproCAD Network links 50 service bureaus that plot CAD drawings. You upload the CAD drawing to the network, which plots it locally or in another city. Express vans deliver the plotted output. The upload is free, included in the plotting charge. Dodge Dataline[2] for Design Professionals is an on-line lead-tracking system. (It's part of RECORD parent company McGraw-Hill.) It has a huge nationwide project database (over 500,000, including those in the CBD, listed in seven stages of project development), and it's updated constantly. The service's cost is based on geographic area. (Dodge Electronic Media, 1221 Avenue of the Americas, 29th floor, New York, NY 10020; 800/426-7766).

What's on the Internet

The designers of the Internet knew it would become impossible to find files stored on its hundreds of thousands of computers, so they created computer sites whose sole job is to index information. Examples: news groups, the World Wide Web, Gopher, and Anonymous File Transfer Protocol (FTP) sites. Each is accessed by a different software program. Since it is not possible to index all information stored on all computers, you typically need to search each of these indexing systems—at least until you become overwhelmed with data. Most of the access software includes "bookmarks" that let you save the name of a site so that you can quickly return to it at a later time. In a freewheeling but fairly limited search, we located more than 70 on-line information sources that might be of interest to architects. Jeanne Brown, architecture studies librarian at the University of Nevada, has compiled an annotated list of architecture and building Internet sites (jeanneb@nevada.edu or The University Libraries, Box 45-7001, University of Nevada, Las Vegas, Las Vegas, NV 89154-7001.

To access the Internet from a personal computer, you need a SLIP driver (such as the freeware Trumpet Winsock for Windows), a fast modem (14,400 baud minimum), and an Internet service provider that your modem can dial up. Some hints at what's available on the Internet:

- *Internet News Groups:* News groups are public discussion forums, in which you can participate. New groups can be found at news.announce.newgroups. Ask questions at news.newusers.questions.
- *World Wide Web Sites:* The most exciting part of Internet is the World Wide Web (WWW or "the Web"). The Web is appealing because software "browsers" not only make searching easier, they readily access images of stunning quality. When you find a site's "home page," you use on-screen buttons or click on highlighted text to access the information offered (which, via "hyperlinks" may be on a computer on another continent). One way to find information on the Web is through the What's New site at http://home.mcom.com/home/whats-new.html, grouped by month and updated every day. The October-to-January list produced no references to architecture, though.

Another Web-search method is to use a search engine. I selected BrokerQuery at http://harvest.cs.colorado.edu/, which found 50 references to the search word "architecture" from among 17,800 WWW home pages. Some references dealt with the "architecture" of computer systems rather than

Continued on page 113.

Inexpensive Animation Lets You Walk Around—or Fly Through—a Model

By Steven S. Ross

This month we explore the world of "entry-level" interactive 3D modeling, with two packages—Virtus WalkThrough Pro 2.0, and Caligari trueSpace 1.0. Both allow you to create 3D models and interact with them—walking through and flying around them. Both also allow you to create movies—animations—that you can play back later. (Last month, we detailed many image-editing packages that offer great flexibility but no animation features.)

WalkThrough is available for Windows and the Macintosh (we reviewed it on a Power Macintosh). trueSpace is a Windows-only application. WalkThrough is a bit more "interactive" but trueSpace has better drawing tools, particularly for highly irregular shapes. trueSpace 2.0, due out soon, also offers boolean modeling, better dimensioning, and associative dimensioning.

Neither does exactly what Autodesk 3D Studio and similar high-end animation packages can do—animate huge photorealistic images. But trueSpace comes close (with a significant speed penalty compared to WalkThrough), at a fourth the price of 3D Studio. And both offer the ability to add texture and color to liven things up and make the images realistic enough to help clients and colleagues understand key design features.

WalkThrough benefits from Apple QuickTime animation tools. They allow fast movement within fairly complex models. But you are not limited to the Mac in this regard. Virtus includes two "players" for your QuickTime animations, one for the Mac and one for Windows. Caligari lets you download an animation player at no charge. Both companies allow you to distribute the players to clients.

In general, you will use WalkThrough more to rough out concept models before hardline drafting, to work side-by-side with the client in interactive mode, or to create simple 3D models from 2D drawings. You will use trueSpace to do fancier animations of simple models, or to do final presentations once the design is final or near-final.

Virtus WalkThrough Pro 2.0

Vendor: Virtus Corporation, 118 MacKenan Dr., Suite 250, Cary, NC 27511, 919/467-9700, 800/847-8871, fax 919/460-4530.
Price: WalkThrough Pro $495, various galleries (sample rooms, textures, scenes, and so forth) $39.
Equipment required: Macintosh 68020 or higher CPU, System 6.0.4 or later with 4MB of RAM available for application (after System is loaded); PowerMac and System 7.1 or higher and 8MB strongly recommended. For Windows version, 8MB and 80486 or higher CPU strongly recommended.

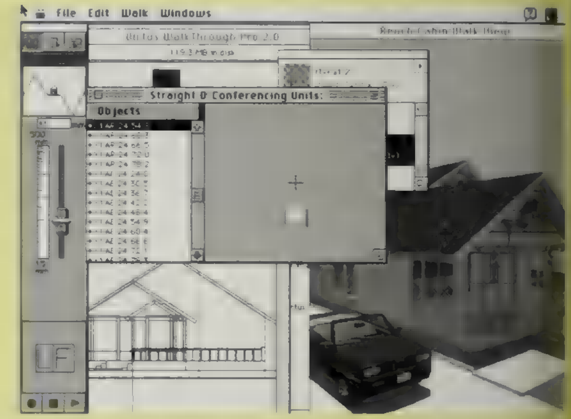
Since its introduction in 1993, WalkThrough has occupied a unique niche in architectural graphics. Strictly speaking, it is not a modeling program. In fact, if you overlap shapes, you may get odd and unintended shading and texture effects. And you can't use one shape to hollow out another—no boolean operations. This makes concave shapes somewhat difficult to draw—you have to build them out of simpler blocks.

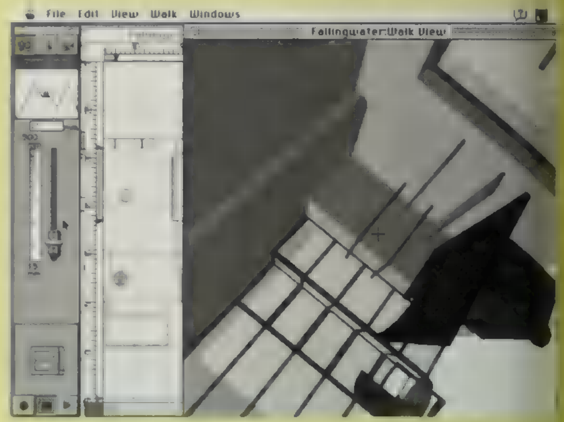
WalkThrough is built for speed—using integer rather than floating-point graphics (you get a workspace about 65,000 points wide and high; if the points are an inch apart you define a cube roughly a mile on a side).

If your working style matches WalkThrough's, you will feel comfortable indeed. For instance, if you build up a structure a room at a time much like you would with a bubble diagram, and bring the pieces together to make the rough building, everything goes well. If you like to start with a shell and stick partitions inside, the final model will run slowly and you will find it more difficult to add elements.

You then set the path you want to follow through and around the model by using the mouse or cursor keys. The view follows the cursor, interactively.

WalkThrough is best used when you are just starting a project (at the conceptual stage), or when you have a 2D drafting package and want to explain your designs to a client—or to yourself. It accepts DXF files and can export 3D DXF, but can import only 2D.





Top: You can put the drawing window (left and the Virtus WalkThrough window side-by-side for final touchups. The path is echo in the 2D plan (not shown).
Above: You can create wild effects, like spinning a room while walking through a model—in this case, we're inside Fallingwate

Although, in general, you draw in 2D in one window, then add depth to the object to get the third dimension, you now have limited editing in 3D. Version 2.0 adds a 3D object selector and 3D surface selector. You select a single object or surface to work on in the 3D Walk View.

There's also a new "smooth shading" that softens edges, giving a smoother and more realistic appearance to curved objects. And walks are more realistic—you can now keep viewers from going through solid objects, if you wish.

There's more flexibility with textures. You can attach them to a model, or keep them separate (and the model smaller) by linking the textures. You can also print the 3D Walk View of models to which textures have been applied. Library support is much improved,

*)ne new and one updated package from Virtus and Caligari
:t you create 3D models , interact with them, and turn them
nto animations that you can play back later.*

though libraries (doors, windows, people, ıd so forth) are only 2D. Hundreds of tex- ıres such as tiles, fabrics, and so forth ship ith the product.

'anuals: Two small paperbacks. One is a ser guide, the other is a tutorial.
ase-of-use: Going to 24-bit color, transpar- ıt or translucent objects, or ıaded/shadowed objects, slows things down ınsiderably. On a slow machine, this can ıuse you to lose the interactivity for which 'alkThrough was groomed. One trick: Scan ıd edit a texture at any convenient resolu- ın, inside a bitmap software package such ; Adobe Photoshop, but save the final image 72 dpi—the maximum your monitor is ‹ely to be capable of anyway.

ne thing that's particularly intuitive: If you art "from the inside," placing your furni- re before building the room around it, for stance, everything in the room moves as ıu nudge the room itself up against the rest the building.
rror-trapping: There's a problem with DXF .port on a Power Macintosh; use the 680x0 ·rsion and run it in 680x0 emulation mode to e "Export" (2D or 3D DXF) and to use 2D XF in the "Import Trace Layer" pop-up enu.
00 *on Reader Service Card*

aligari trueSpace 1.0

endor: Caligari Corporation, 1955 Land- gs Drive, Mountain View, CA 94043, 5/390-9600, 800/351-7620, fax 415/390-9755.
'ice: $795. Free upgrade to 2.0 when it ips (expected this quarter). Viewer for dis- ibuting your animations is also free, but ıst be obtained separately.
ıuipment required: Windows, 80386 and IB of random-access memory for minimal nctionality. We strongly recommend an 486 or Pentium, and 8MB (16MB for large ıdels or ray-tracing).

ıligari was founded in 1986 as Octree Soft- ıre to produce graphics software for the niga. It has many movie and TV animation ojects to its credit. Only with release of ıeSpace 1.0 last year, however, has the firm ne after the architectural market.

The "feel" of this software is that of a drafting program and paint program all in one. While it is nice to have all the functionality in one place, it does slow things up. You cannot, for instance, easily sketch with this software unless you have a very fast computer. We had to mount it on a 90 MHz Pentium with 9 millisecond-access hard drive and 16MB of RAM, and S3-accelerated graphics card to get comfortable reaction time with it. We're told that Version 2.0 will be somewhat faster.

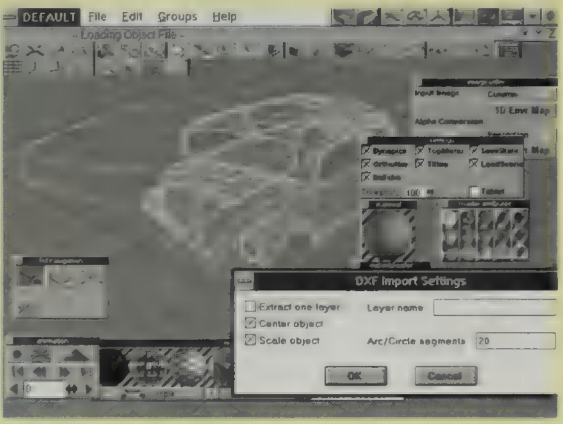
Nevertheless, we suspect most architects will want to import their designs into trueSpace, rather than start with it. Fortunately, trueSpace handles imports from DXF, even 3D DXF, and even very large DXF files, 2MB or more, easily. DXF entities that have no "physical" meaning (points, dimensions, extrusion vectors, lines with no width, and so forth) are not translated into trueSpace.

Aside from DXF, Version 1.0 supports 3D formats such as 3D Studio, WaveFront, Imagine, and LightWave, and imports most standard image formats, including BMP and TGA. (Version 2.0 will also support PostScript, Adobe Illustrator, TIF and GIF import and FLIC and JPEG export.)

Version 1.0 has a wide range of drawing objects that you can put together, stretch, pinch and otherwise deform to get the shape you want. There are impressive special effects such as fog and ray-traced surfaces that cast reflections.

Version 2.0 will include better solid rendering of 3D objects, 3D boolean operations, field rendering for improved video quality, and auto-dimensioning and numerical entries for technical illustration.

Tools for animation are the chief reason to pick trueSpace over other paint, illustration, and modeling packages. In general, you build or modify your image. Then you set a path through and around the image. Finally, you set your lights and shading. (There's no point setting up lights first; you don't need them where your path's view won't see the surfaces they illuminate. You want as few as possible to keep speed up.)
The computer then calculates the images for animation, automatically. For very high quality, the animation can be output as a series of TGA images.



DXF Import Settings

☐ Extract one layer
Layer name
☑ Center object
☑ Scale object
Arc/Circle segments 20

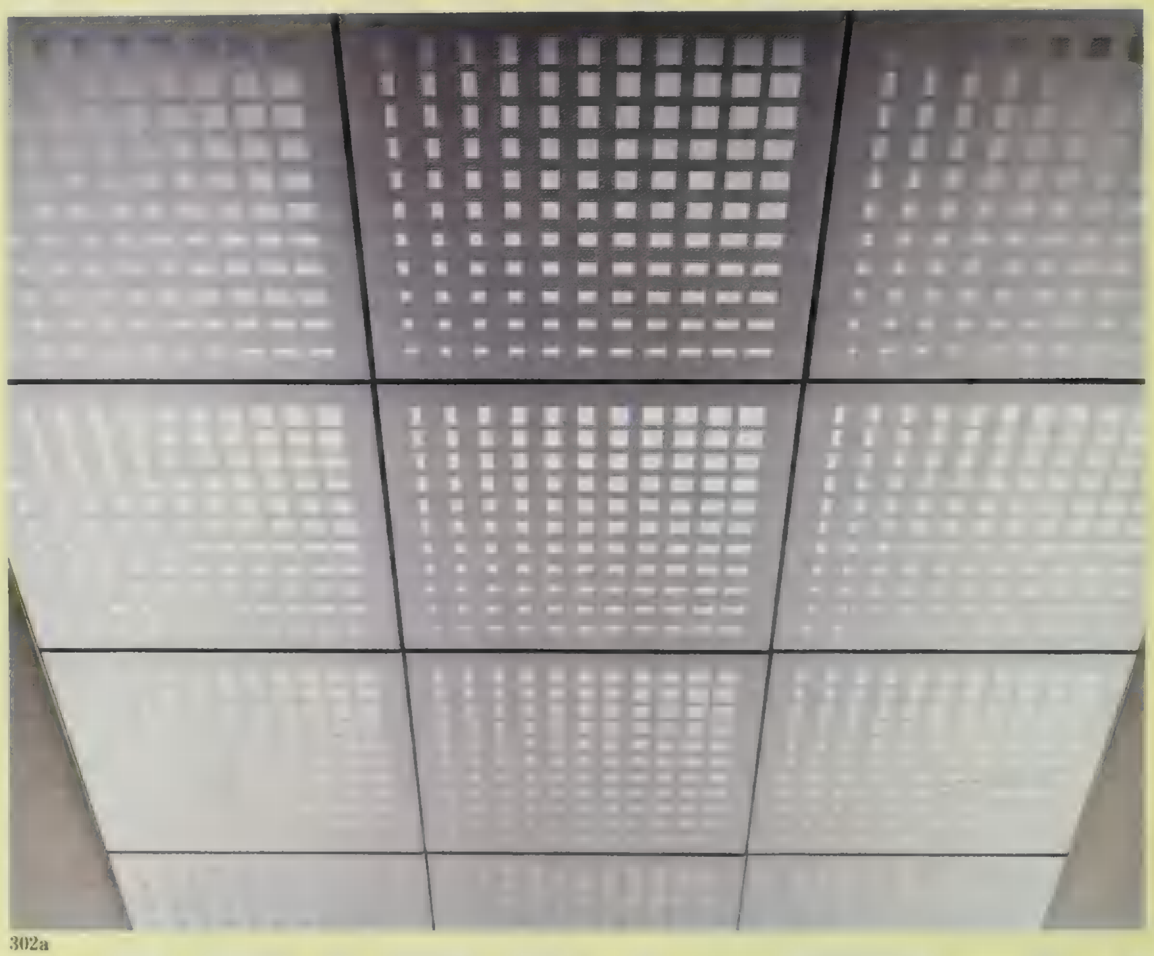
Deforming an object is reasonably intuitive: trueSpace builds a box around it, and you deform the box. After deformation, the VW Bug looks melted. This image, by the way, with its many vortices, took just a few seconds to modify on a 486-class computer running at 33 MHz—about the slowest you should use. Here, the import process for DXF file was begun as well.

In general, you will not want to take a DXF image out of trueSpace and put it back into your CAD package. It is possible, but test first. Version 1.0 does not output DXF with layer information. Some DXF import filters in CAD packages require that DXF entities be associated with a layer.

Likewise, transfer to 3D Studio ASCII is not perfect, mainly because the file structure for 3D Studio ASCII is rather rudimentary; it ignores most information on materials (surface texture, for instance) and grouping hierarchies.

Manual: One large paperback with tutorial and command reference. Writing and layout are excellent, but not oriented toward architectural work.
Ease-of-use: Speed is an issue.
Error-trapping: Remarkable. We occasionally crashed the system doing something most readers would not do—maintaining a memory-resident program to capture on-screen images. When we restarted Windows and then trueSpace, we recovered just about everything.
301 *on Reader Service Card*

Decorative Ceiling Treatments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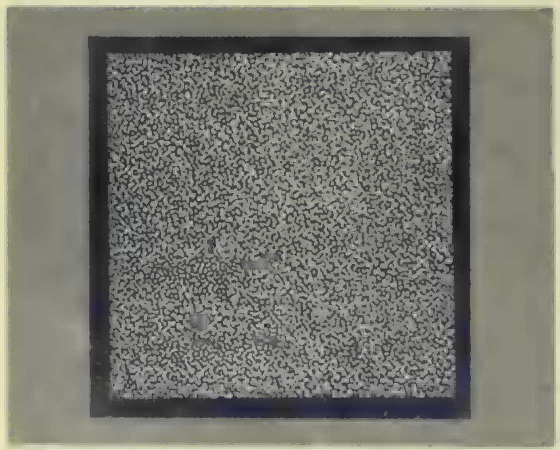
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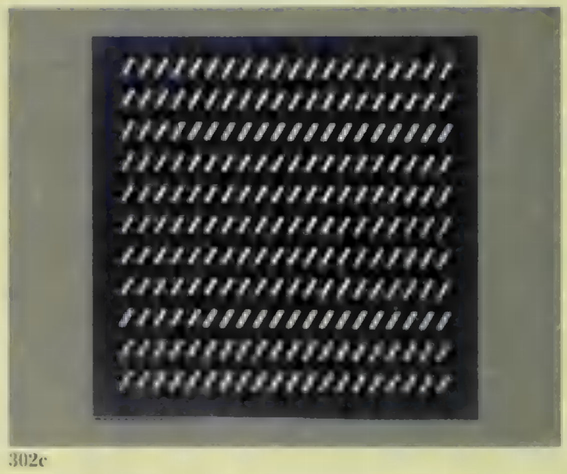
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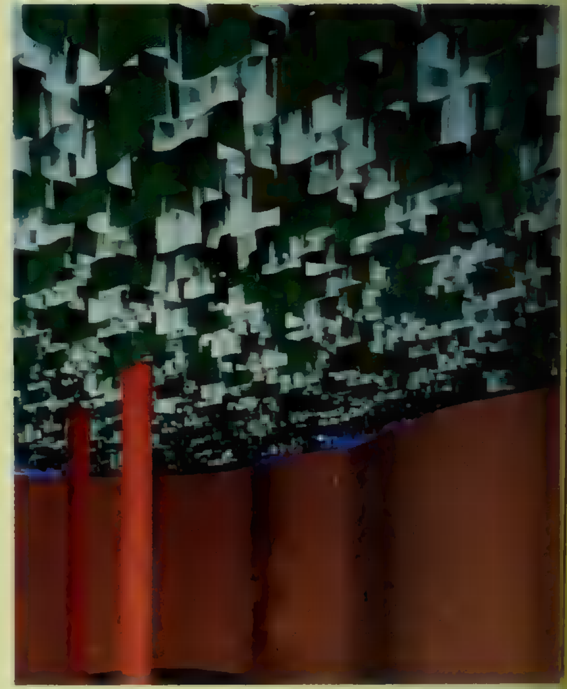
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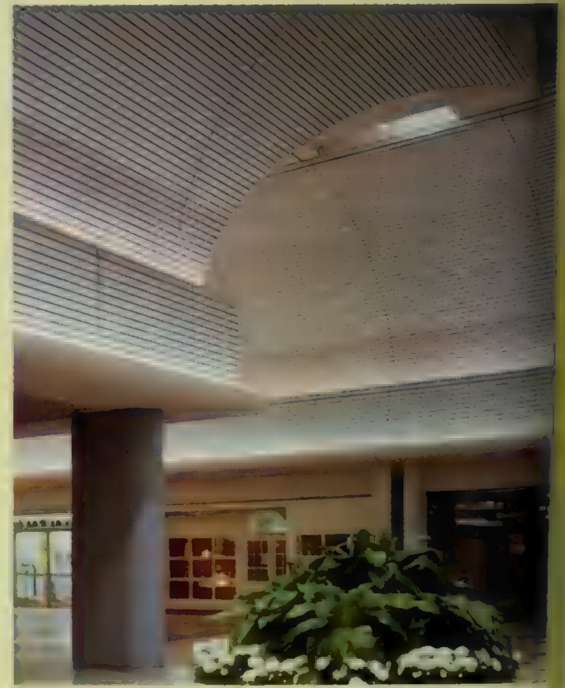

303b

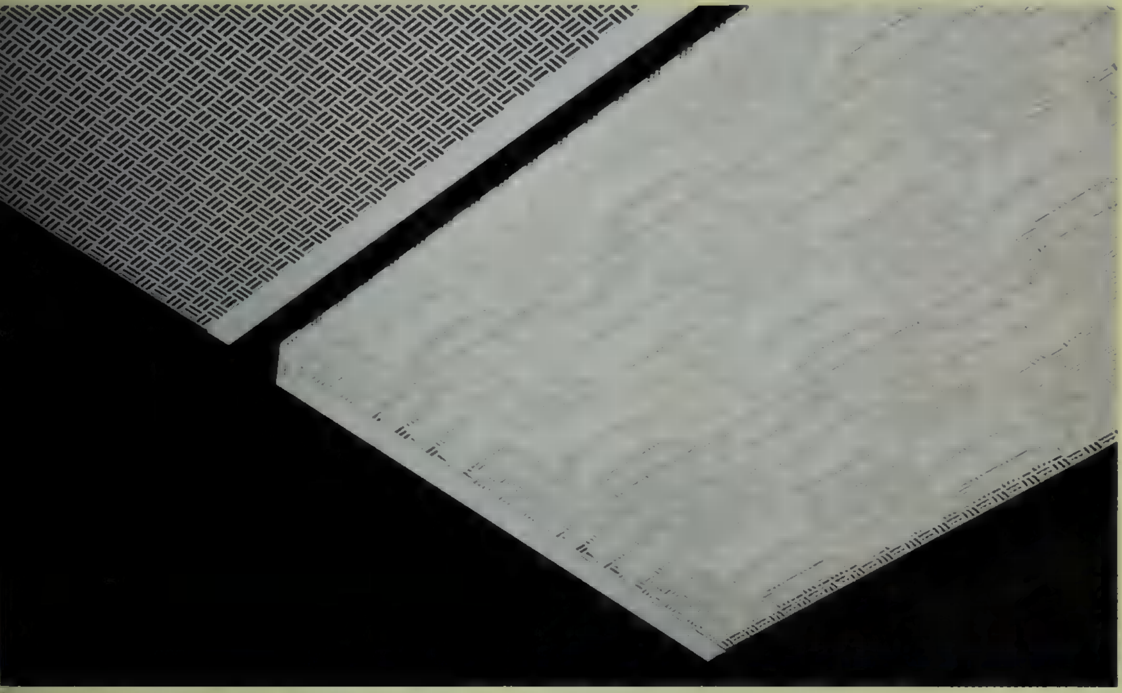
302. Gleaming overhead

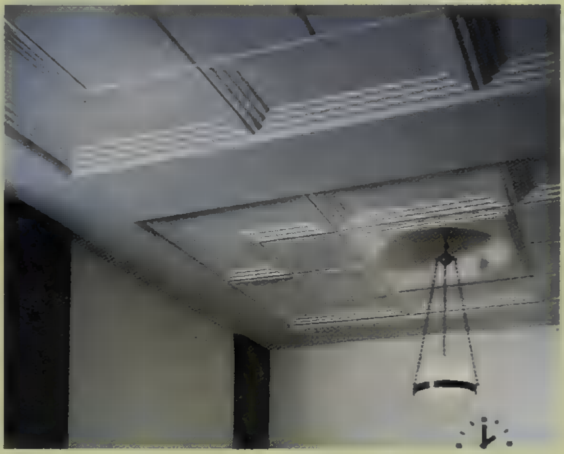
Forms+Surfaces has taken its expertise in thin-metal treatment (the Santa Barbara-based source already makes custom metallic wall and door finishes) onto the ceiling, with new aluminum panels for use in suspended grid. All tiles can have regular edges for use with 15/16-in. T-bar; [illegible] designs can be [illegible] formed edges for snap-in [illegible] carriers. Raised [illegible] panel styles come [illegible] several finish [illegible] can make any given installation a custom ceiling. The patterns shown are from the top-of-the-line CS5000 Series, which offers both specular and satin finishes on the same panel. Forms+Surfaces, Santa Barbara, Calif.

303. Linear and leaf

With its acquisition of Interfinish Specialty Products, Chicago Metallic is able to offer even more decorative ceiling options to go with its own grid systems. Shown here: Leaf-Lite, with short, formed-metal "leaves" dangling from concealed carriers (*303a*). A somewhat exotic ceiling offered in bright mirror and brass finishes (or any custom color), Leaf-Lite effectively hides light sources placed above the channels. A more conventional look, the narrow-profile Vista ceiling is nevertheless capable of sinuous curves (*303b*). For this installation, an outdoor mall converted into a skylit atrium (DI Architecture, Inc.), use of a laser transit and custom-bent carrier channels assured that individual slats were perfectly aligned over spans of 500 feet. Chicago Metallic Corp., Chicago.

eiling treatments in metals, wood, and FRG—some brand new, ome updates of older designs—provide a look at the expanding range f decorative options available for the fifth wall.





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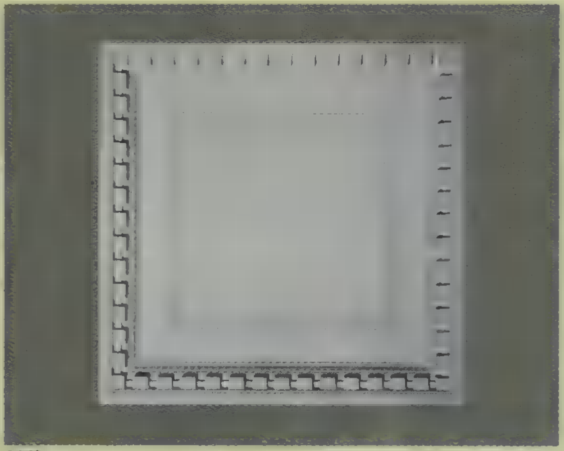
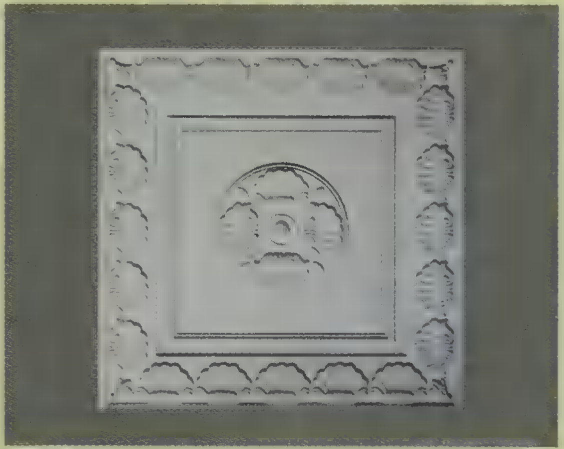


306b

a

305b



306c

04. Punch proof

new perforated-steel shell for Sonex
oustical-foam wall and ceiling panels adds
impact-resistant product to Illbruck's
und-control line. The Class-A, non-fibrous
ım has a surface configured in hundreds of
echoic wedges said to collect noise from all
gles; the open-cell construction of the
ıterial itself absorbs sound. Basketball-
oof housing has a 50-percent-free
rforation pattern, and comes in light gray,
ige, and white. Suitable for humid environ-
ents. 800/662-0032. Illbruck, Minneapolis.

305. Scandinavian feel

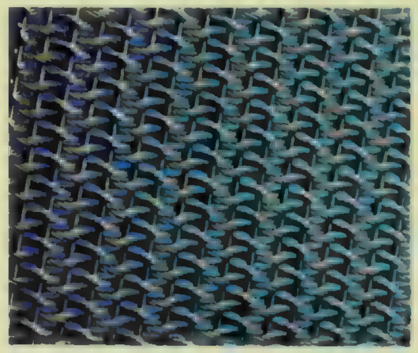
The Ventwood ceiling is made of evenly spaced rails of solid red oak, clear hemlock, and red cedar. Pre-assembled into custom-size interlocking panels using dowels, ceilings are installed with metal clips onto a standard grid system. The coved hall pictured (*305b*) is part of new Music Rooms at M.I.T. designed by university staff architect Melanie Brother. Here, the connecting dowels have been painted to match the black acoustic batt placed behind the ceiling. The detail (*305a*) shows how neatly diffusers, sprinkler heads, and recessed lighting can be inserted into the slatted panels. Howard Mfg. Co., Kent, Wash.

306. Easy-to-install coffered ceiling

Cadre 2- by 2-ft panels, made of plaster-like fiberglass-reinforced gypsum, provide a classic coffered-ceiling appearance in a completely accessible and fire-resistant suspended assembly. A concave dome, shown in the Executive pattern, highlights a pendant fixture (*306a*); Dentil (*306b*) and Shell (*306c*) are more traditional, sculptured designs. USG Interiors, Chicago. ■

307. Low-shading tinted glass
A high-performance glass said to provide exceptional control over solar heat gain and glare with minimal exterior reflectance, SuperGrey has a 0.38 shading coefficient. Architects Stucky+Vitale found the glass to offer a color-neutral, comfortable working environment as well as the esthetics of a darker gray exterior color. Libbey-Owens-Ford Co., Toledo, Ohio.

308. Two-hour-label cable
Copper-clad, mineral-insulated cable, developed to keep fuel shut -off valves operable even in very-high-temperature refinery fires, can insure emergency power feed for evacuation and fire-fighting equipment. Installed in free air, UL-listed fire-resistive cables require much less space and are more flexible than fireproof conduit; can be retrofit. Pyrotenax USA, Inc., West Syracuse, N.Y.



309. Stainless-steel wire cloth
A French source offers stainless-steel wire cloth and mesh in a wide range of decorative textures, wire shapes, and open-space patterns, such as this combination of rods and woven wire. Virtually rust proof, metal "cloth" was used as a for-the-ages interior wall treatment and as a 250-ft-high exterior-stair enclosure in the Bibliothèque de France. Sprint Metal, Paris.

310. Office filing components
Office Specialty, a Canadian firm, recently acquired the patents and furniture designs formerly manufactured by Storwal. Now being marketed as the Performance Group, the office-storage line is based on a 1 1/2-in. module, with files in 41 different case heights and eight file-front options. Custom tops and configurations are a specialty. Office Specialty, Holland Landing, Ont.

311. Light-diffusing curtain wall
Architects Thompson, Hancock & Whitte Associates, wanting the large east- and west-facing walls of Cincinnati's new Delta Air Lines Terminal to admit lots of daylight with minimal glare, specified custom ChromaFusion laminated glass. A sandblast-density interlayer with a light-diffusing floodcoat seems luminous even on overcast days. 800/275-7272. Cesar Color, Burlingame, Calif.

312. Lead-abatement covering
A domestically made woven-fiberglass wallcovering, Newtex has been approved by the New York City Housing Authority as a reinforcement in lead-paint encapsulant systems. Paintable, textured, and air permeable, the material can be hung over cracked and rough brick, concrete, block, drywall, paneling, and plaster. 800/836-1001. Newtex Industries, Inc., Victor, N.Y.

313. Heavy-use seating system
Architects of the just-opened Terminal 2 at Frankfurt's international airport specified over 4,500 Meeting seats by Italian manufacturer Matteograssi, including these chaise longue models (for really long layovers?). Made with black hide stretched over a steel frame mounted on a fixed beam, seats and lounges can be ordered with tables as shown. BFI, High Point, N.C.

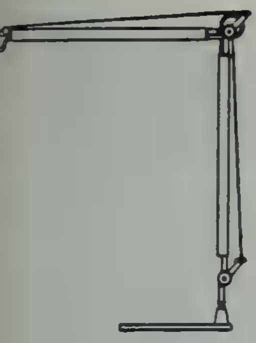
314. Corrosion-proof piping
Made of solvent-weldable CPVC, FlowGuard Gold plumbing systems for hot or cold potable water are sai never to corrode, pit, or scale, even i the most aggressive water condition The material's basic flexibility permits fairly tight radius curves, and greatly reduces water hammer within the system. Meets ANSI/NS Standard 61 and all national codes. The BF Goodrich Co., Cleveland. ■

Short takes

A significant contribution.
In a major coup for the preservation of pristine wilderness areas, Georgia-Pacific, a major forest owner, has entered into a voluntary agreement with The Nature Conservancy to develop a joint ecosystem management plan for North Carolina forested wetlands the company owns. Seven large tracts, comprising almost all of the swamps and bottomland still unprotected along the Lower Roanoke River, had been designated as one of the Conservancy's "Last Great Places." G-P has relinquished all timber rights to the 6,500 acres of the most ecologically valuable land; any tree harvesting on the other sites must be mutually agreed on—and done by helicopter.

Video guide to ADA compliance. A 30-minute film covers the most important requirements, going on-location at hotels, museums, and beauty shops to show inexpensive ways to meet access requirements. Cost: $39.95 plus postage from the Eastern Paralyzed Veterans Associa tion, 800/489-8436.

Takeover. EFCO Corp. of Monett, Mo., has acquired the U.S. assets of Don Reynolds Facades, and will be marketing and installing the British curtain-wall system in North America. Nicholas Grimshaw used this exterior-glazed wall at Heathro Airport [RECORD, June 1993]. ■



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What is the Trap? The trap is the approval, specification, and installation of ceramic fire rated glazing in certain one hour wall applications; i.e., occupancy separations, area separations, stairwell enclosures, elevator lobbies, etc.

Why are so Many Intelligent Professionals Such Easy Prey? Their time is limited so they rely on listings and labels issued by accredited testing laborato-

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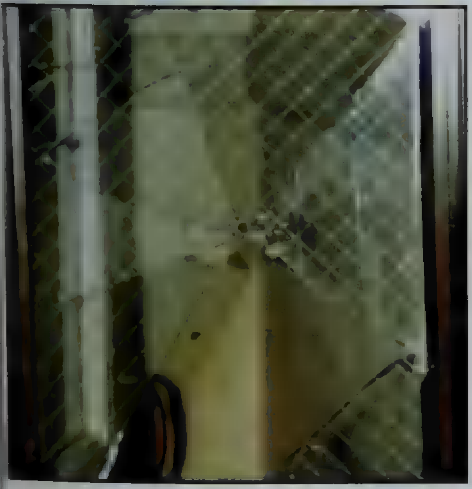


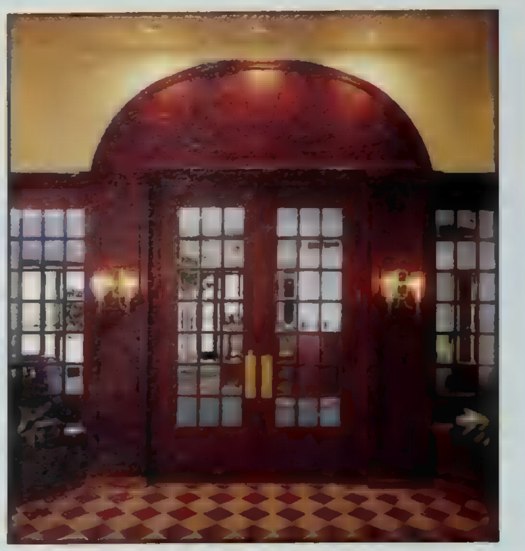
SCHOOLS REPLACE WIRED GLASS WITH SUPERLITE I

Efforts to increase student safety, enhance visual control in the classroom, and reduce maintenance costs are leading schools across the United States to install *SuperLite*–a wireless fire and safety rated glazing.

Schools are incorporating more and more glass into their design to increase visual security and create more open and spacious environments. Previously, architects have been limited in their fire rated glazing options.

Jay Labarre, principal architect at Labarre Associates, is the Architect of Record for several schools in Louisiana's Livingston Parish School District. The school district's projects

continued on page 3...



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EGGERS INDUSTRIES INTRODUCES A NEW DOOR WITH SUPERLITE FRENCH FLAIR!

Finally a full-lite, fire rated, safety glass, wood door with style . . . French that is. Eggers Industries introduces the first door featuring *SuperLite II*-20 minute wireless fire and safety rated glass with French flair. The door is available with a glass size as large as 2,792 square inches of lite and up to 78" in height.

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NEW BREAKTHROUGH IN 45 MINUTE GLAZING

SAFTI and Ceco Door Products have jointly announced the largest clear, non-wired 45 minute fire rated glazed openings available in steel door and framing products.

Fully glazed with *SuperLite II*, Ceco doors, sidelites and vision lite systems fire tested successfully for 20 and 45 minute ratings on doors as large as 4'x9', and single-pane hollow metal lite systems up to 32 square feet.

THE 60 MINUTE TRAP . . .

continued from page 1...

ries, and on manufacturers' promotional literature about product approval. However, well respected testing labs have issued an unprecedented, non-standard 60 minute rating to FireLite™, a ceramic glazing. These labs have listed it for installation without considering model building codes and standards. Unfortunately, the labs have not told the public or building officials that products bearing their certification and label are listed for uses not allowed by code.

UL Ratings vs. Code Test Standards. How can Underwriters Laboratories (UL) issue ratings and listings not recognized by the model building codes? By using its own test standard, not the test standards in the model building codes. From 1962-1991, UL's window test standard UL 9 was in concert with the building codes; it limited the test duration to 45 minutes. The building codes have not changed regarding the 45 minute window limitation. However, in February 1991 UL made a radical departure from the long standing practice of testing within code parameters and extended the testing duration of Standard UL 9 - Fire Tests of Window Assemblies. SAFTI believes this change was to accommodate the requests of glass block glazing manufacturers.

Know the Codes. None of the model building codes have a 60 minute standard for windows, or allow a product which has met only the least stringent window acceptance standards to be used where a 60 minute fire resistive rating is required, such as occupancy separation walls. Model code test standards limit window ratings to a maximum of 45 minutes (ASTM E163, UBC 43-4{7-4}). Thus, there is no such thing as a 60 minute "window." A recent UBC Code interpretation issued by the ICBO states, *"For a window to be rated as a separate one-hour fire-resistive assembly, it would have to be tested as a wall assembly in accordance with UBC Standard No 43-1, which would include the requirements for heat transmission."*

What They Don't Tell You. The manufacturer doesn't tell you that FireLite does not protect against radiant heat transfer and cannot meet wall test standards; or that at the end of a 60 minute fire test there is enough heat passing through ceramic glass to cause furniture, wall paper, drapes, etc. on the non-fire side to ignite. They don't tell you that the amount of radiant heat passing through FireLite after 60 minutes jeopardizes human life safety because it can seriously impede safe escape. They don't tell you that the use of these products in large lite sizes jeopardizes the integrity of the fire wall, the building and the safety of building occupants. The testing agencies don't tell you this information either, although their listings imply the product is tested and rated for installation in accordance with the codes.

FireLite's 60 minute window rating has caused substantial confusion among architects, who improperly specify it for use in one hour occupancy walls and similar locations requiring a true one hour fire resistive rating. Code officials likewise mistakenly believe that the 60 minute FireLite rating and label is the same as the 60 minute rating and label for the wall.

Read the Fine Print. Be familiar with the nuances of the available glazing products. Ask the hard questions. Does the application require a 45 minute *window* or a 60 minute *wall* assembly? Does the product meet the code requirements for one hour construction? Has the product been tested to the wall test standard?

Uses of *SuperLite II* Will Keep You Clear of the Trap. *SuperLite II*, formerly Contraflam, is the only glazing product tested to the stringent wall testing requirements of ASTM E119. Its unique gel filled construction addresses the hazards of extreme temperature rise, ensuring the safety of building occupants. *SuperLite II* is listed to large lite sizes and is not restricted to area limitations.

Next: Where did all the laminated FireLite go?

(ADVERTISEMENT)

Linda Abels, Principal, Springfield Middle School in Louisiana. SuperLite I installed in her school provided full wireless vision and added safety for her students.

SCHOOLS REPLACE WIRED GLASS WITH SUPERLITE I

continued from page 1

nclude renovations of existing schools nd design and construction of new chools.

abarre planned to incorporate large tes of glazing in excess of the 1,296 quare inch limit of wired glass for full sion assemblies in his school projects. naware of *SuperLite I* when the specications were written, Labarre specied ceramic and laminated ceramic for he fire rated glazing.

fter the bidding stage, the architect earned that the laminated ceramic as not available in the large sizes nor as it readily available. Not wanting to acrifice or compromise his original degn, Labarre needed a wireless glazing roduct that met a 20 minute fire ratng, a 400 ft. lb. impact requirement, in large lite sizes–and he needed it quick. After speaking with glazing contractors and referring to Sweet's and other industry publications, Labarre discovered *SuperLite I*.

"The best news was that ***SuperLite*** *met all of our needs, plus it's made in the U.S., which meant it could be shipped in just 10 days. It is always exciting to learn about new technology products that really work in line with your project's requirements. However, it is an added bonus when these products expand your design options to create innovative applications and uses.* ***SuperLite I*** *is a welcomed product to a market which was previously so limited."*

Many school districts have turned to *SuperLite* to meet not only their design and aesthetic preferences, but to answer the very real safety issues and the potential liability concerns they represent. Several school districts throughout the U.S. have been faced with substantial law suits resulting from wired glass breakage incidents. Tough to cut wired glass and easy to break ceramic glazings simply do not offer the impact protection that *SuperLite* products do. *SuperLite* is 10 times stronger than wired glass and is the safest fire rated glazing product available.

To learn about solutions for your school's glazing problems, call SAFTI toll free at 800-822-2088.

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SuperLite II installations:

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Fitchburg High School, Fitchburg, MA
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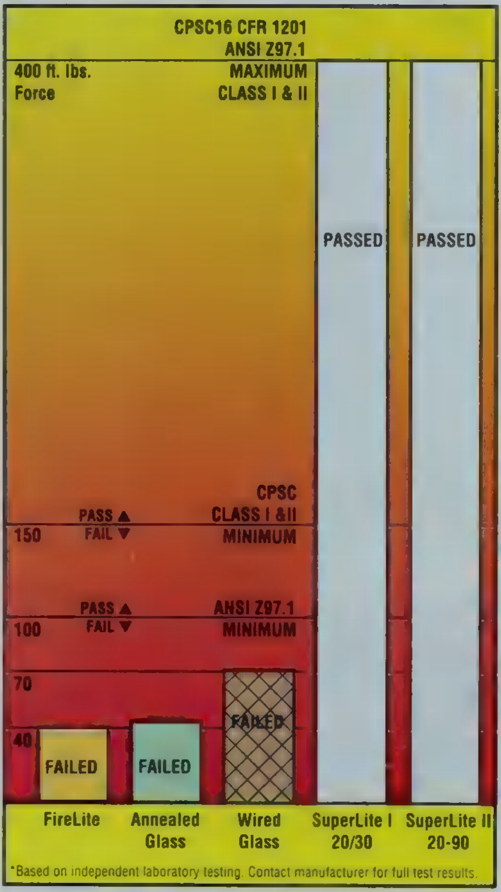
"The best news was that SuperLite met all of our needs, plus it's made in the U.S. . . .

Safety Impact Test Results*



*Based on independent laboratory testing. Contact manufacturer for full test results.

SuperLite products provide highest level of safety while meeting standards specified by Model Codes and federal law.

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CREATIVE USES OF GPX SUPERLITE FRAMING SYSTEM

New Design Freedom

With the combination of the Glassprotex (GPX) framing and *SuperLite II* glazing, architects are now capable of providing windows and doors which meet fire and safety code requirements while allowing creative flexibility in stringent applications. No longer restricted to small vision areas or traditional frame configurations, designers are specifying the GPX System and creating their own possibilities which aesthetically resolve a variety of problems.

GPX Provides Only Solution for Atlanta Airport

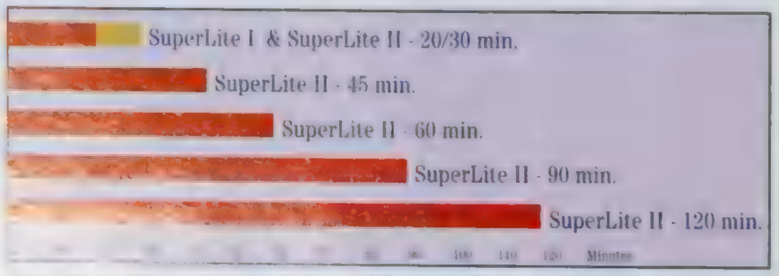
Turner Associates Architects & Planners, Inc. in Atlanta, Ga., architects of the Atrium Central Passenger Terminal Redevelopment at the Hartsfield International Airport, relied on the diversity of the GPX System to comply with otherwise confining fire protection requirements. A two-story fully glazed window/wall separation barrier was required to separate an atrium space from the main terminal. Located between the north and south terminals over the Automated Guideway Train, the window/wall system had to meet 90 minute fire wall standards, as well as responsibly maintain the visual quality required in such a high profile location. Additionally, the system needed to accommodate doors that provide access both in and out of the atrium space.

Capable of atypical frame configurations and not limited simply to square makeups, the GPX System met the architect's design challenge of a segmented arc in plan, comprised of full height–7'6" glazed panels. The two end panels on the lower level became the Fire Doors. In keeping with the visual character of the surrounding space, the architect specified stainless steel cladding to cover the framing in order to match the interior handrails, tubing and mirrors.

New Standard in Fire Protection Technology

By specifying the GPX *SuperLite* Fire and Safety System, the architect supplied an innovative, aesthetically pleasing solution to a code requirement problem where typically there has been no solution. Fully listed by both Underwriters Laboratories and Warnock-Hersey International, GPX window/wall and door systems create the new standard in fire protection technology.

SuperLite GPX GLASSPROTEX



[illegible] line of fire rated glazing products to [illegible] of applications.

Stainless steel clad 90 minute window/wall system at the Hartsfield Airport exemplifies the design freedom offered by GPX.

LEARN MORE ABOUT FIRE RATED GLAZING TODAY!

As architects, you want to provide your clients with designs that are not only visually exciting, but cost effective and in full compliance with code requirements as well.

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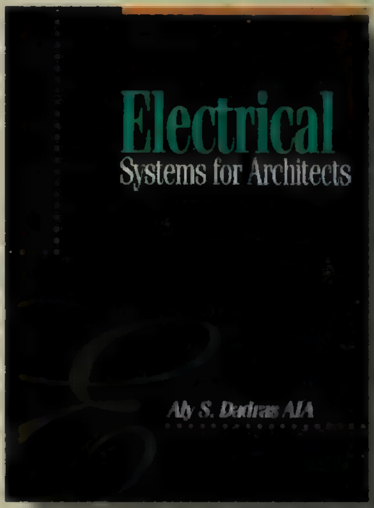

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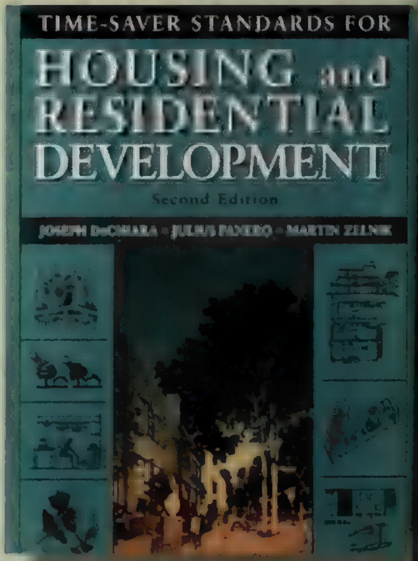
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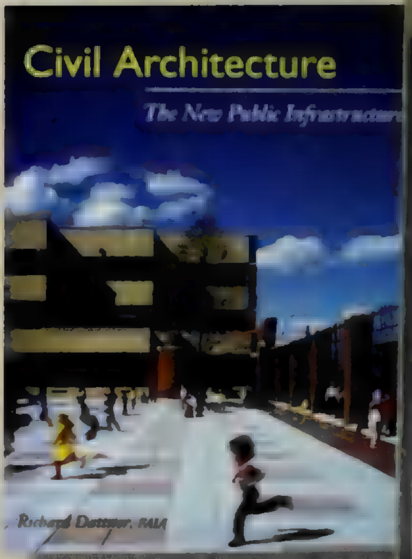

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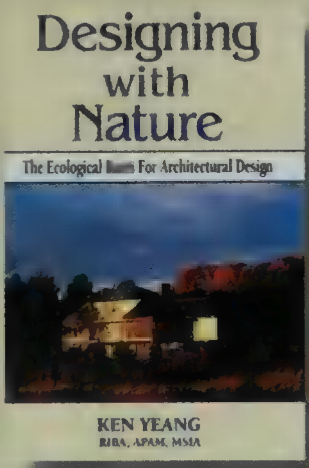

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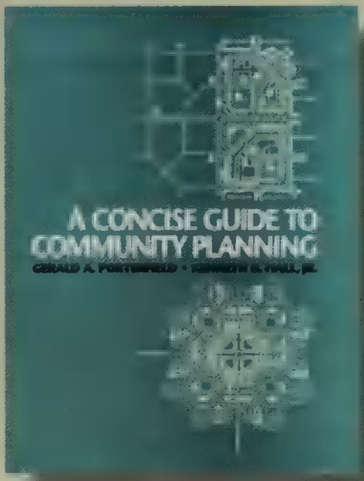

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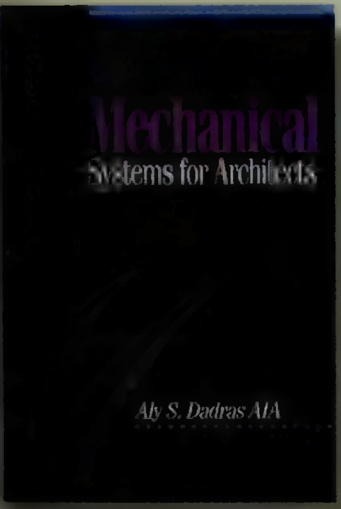

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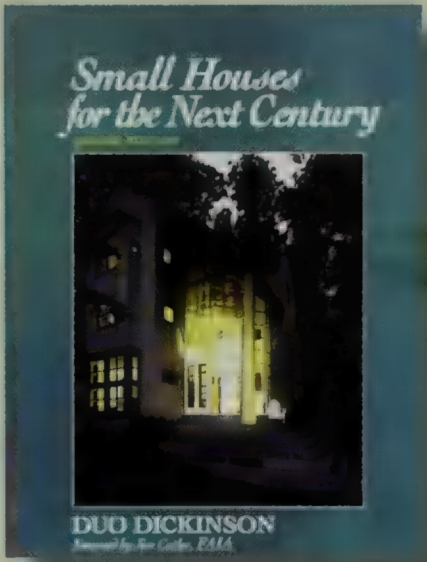

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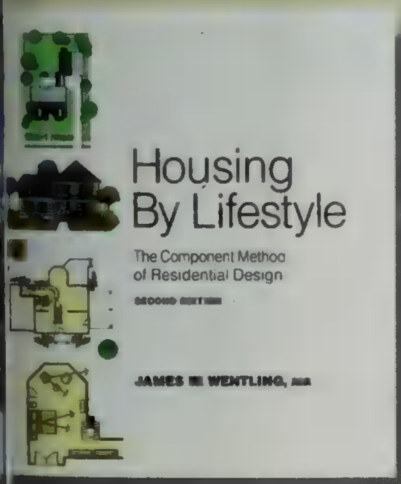

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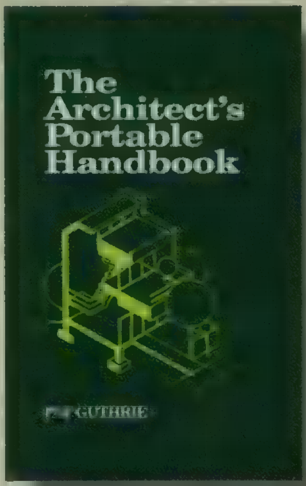

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That might have been how CUH2A architect Fred Bliefernich described the November 1993 assignment from Six Flags® Great Adventure® The project at the New Jersey theme park called for a single structure designed to look like a series of shops on a colonial "Main Street" that featured the well-known cartoon characters. The deadline was five months away. And most of the construction would take place during winter.

The Sweet's Catalog Files, with their depth and breadth of product alternatives, quickly became Fred's primary reference tool for design concepts, materials, and manufacturer contacts.

"If a manufacturer wasn't in Sweet's, it wasn't considered for this project," says Fred, an associate and senior project architect at the top-20 A/E firm headquartered in Princeton, New Jersey. "The Real Brick™ catalog in Sweet's provided enough detail for us to specify their U.S. Brick Systems® which was ideal for cold weather installation." And a call to Sweet's Buyline® service put Fred in touch with regional sales representative Charlie Fieger, who quickly sent samples and assured product availability.

In spite of the worst winter in years, the park opened as scheduled on April 1. And with help from Sweet's, the project that had seemed a little looney now had everyone whistling a different tune.

For Fred and other architects, the Sweet's Catalog Files and SweetSource®, complementary electronic product information on CD, are essential. "With manufacturers' binders often being two to three years old, you need to go to the most up-to-date, comprehensive source of information," he says, "and that's Sweet's."

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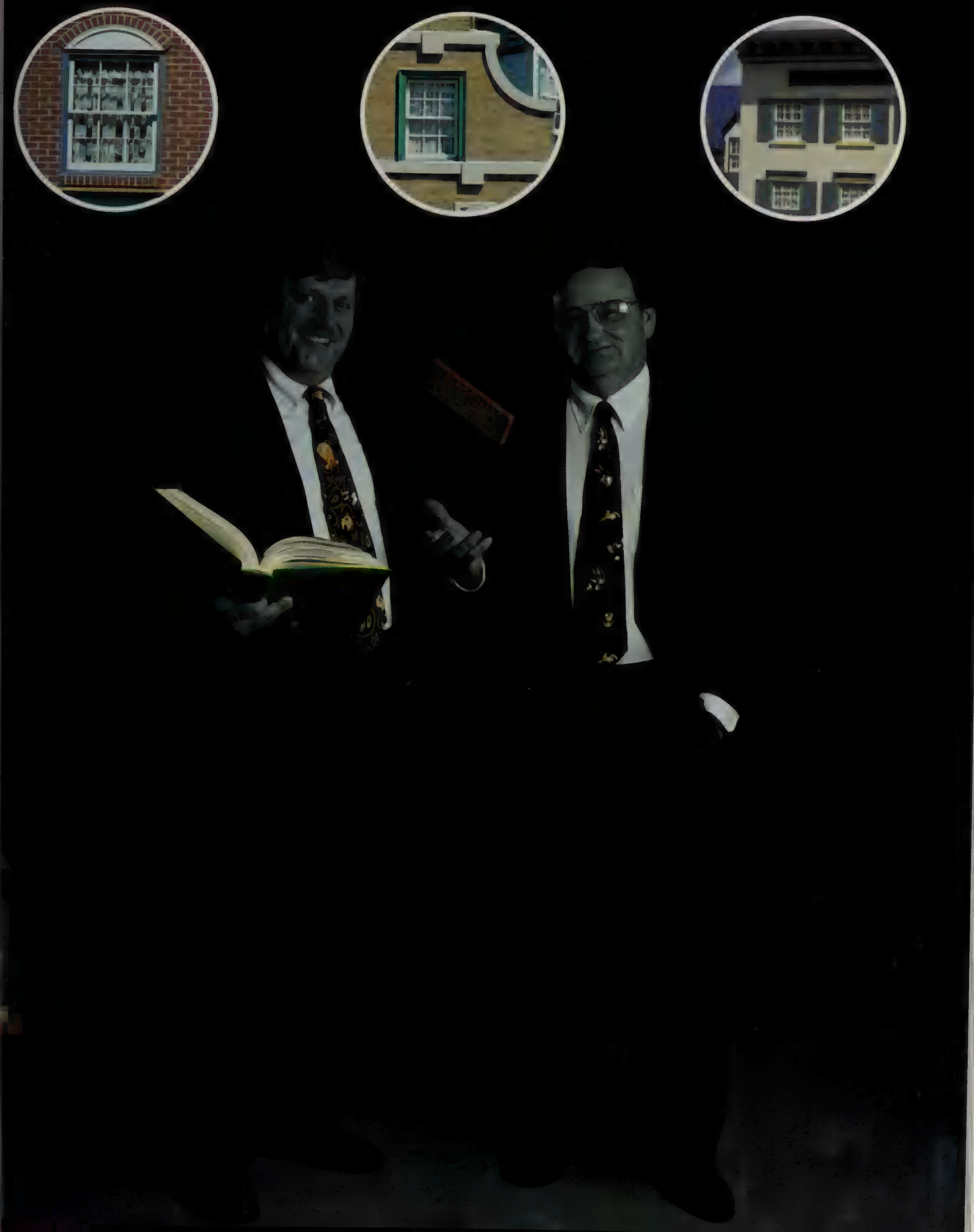

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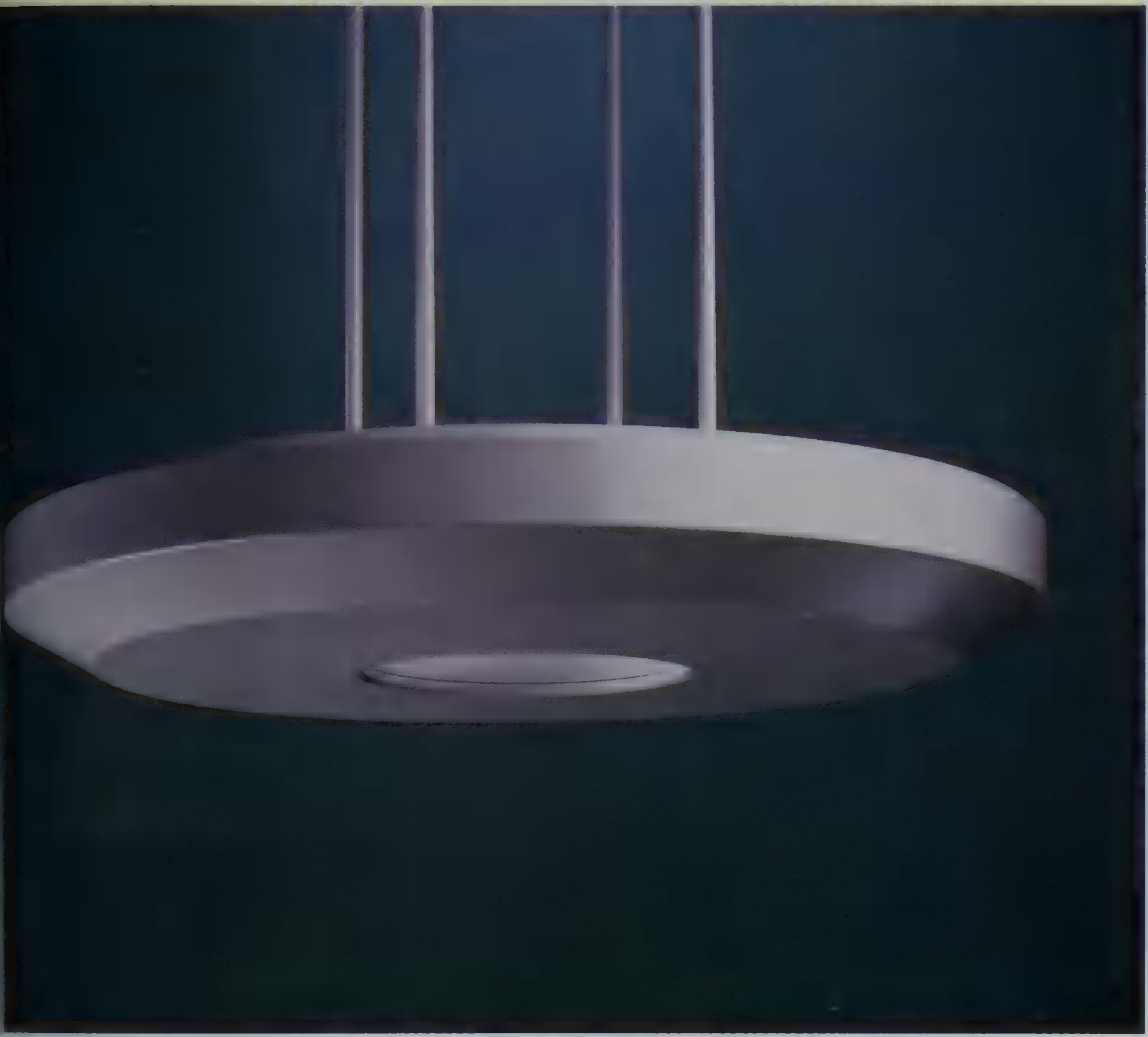

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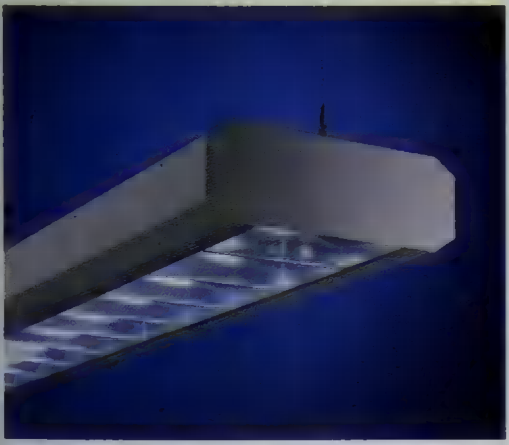

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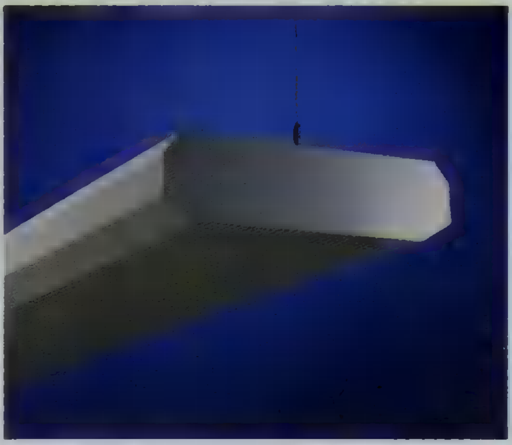

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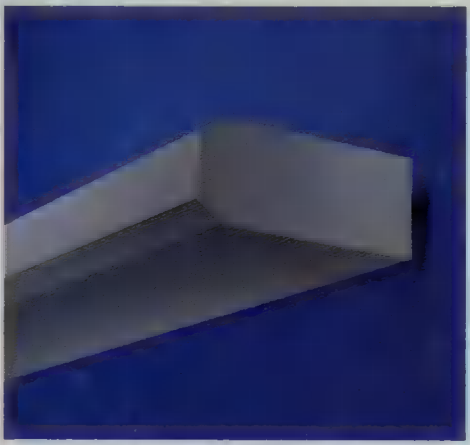

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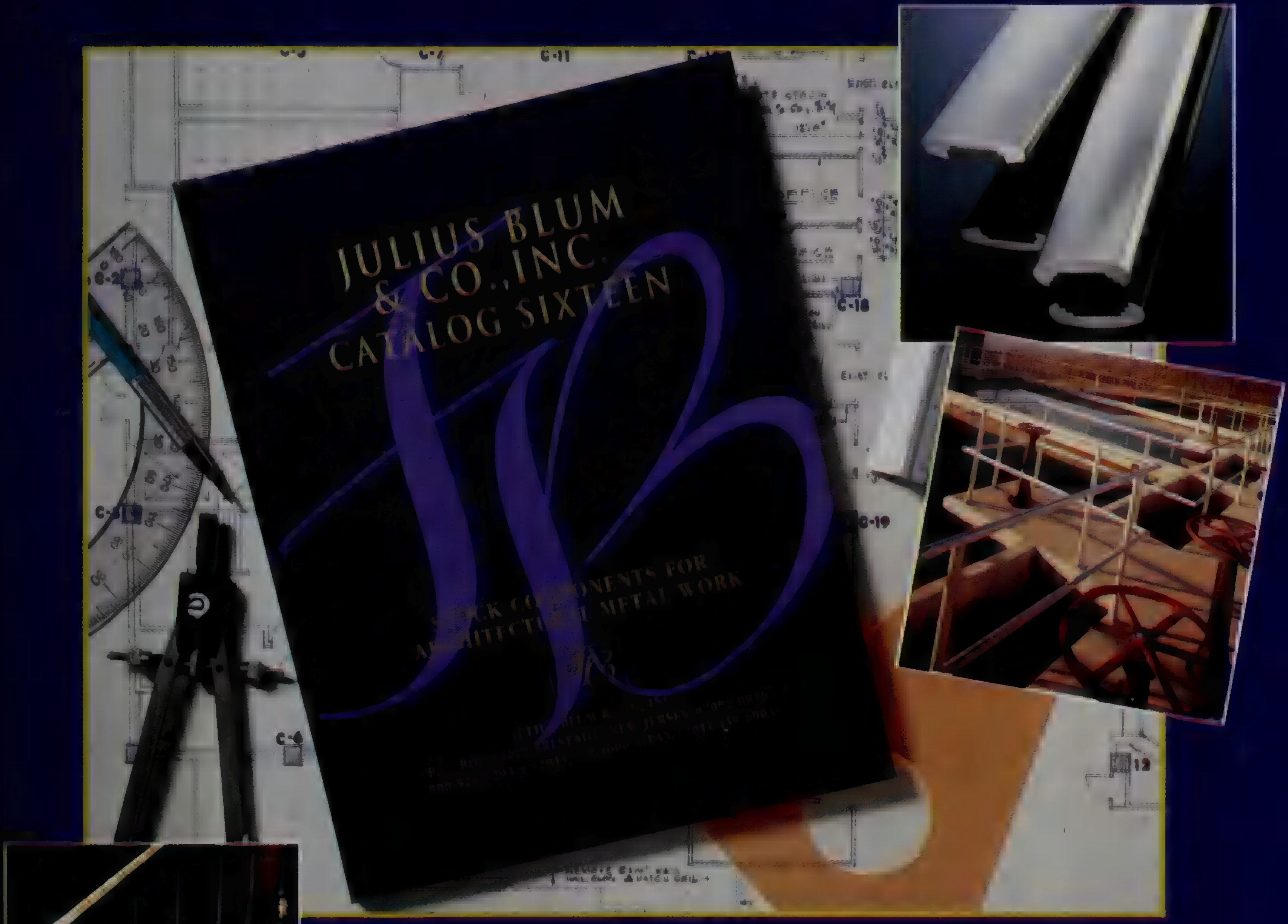

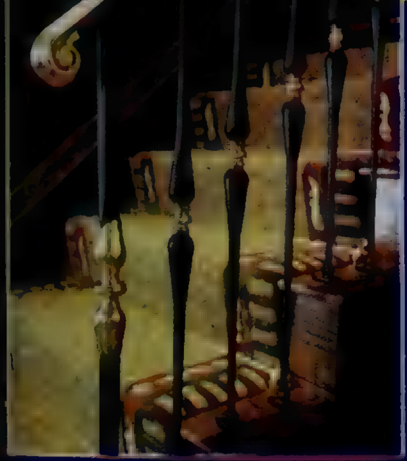

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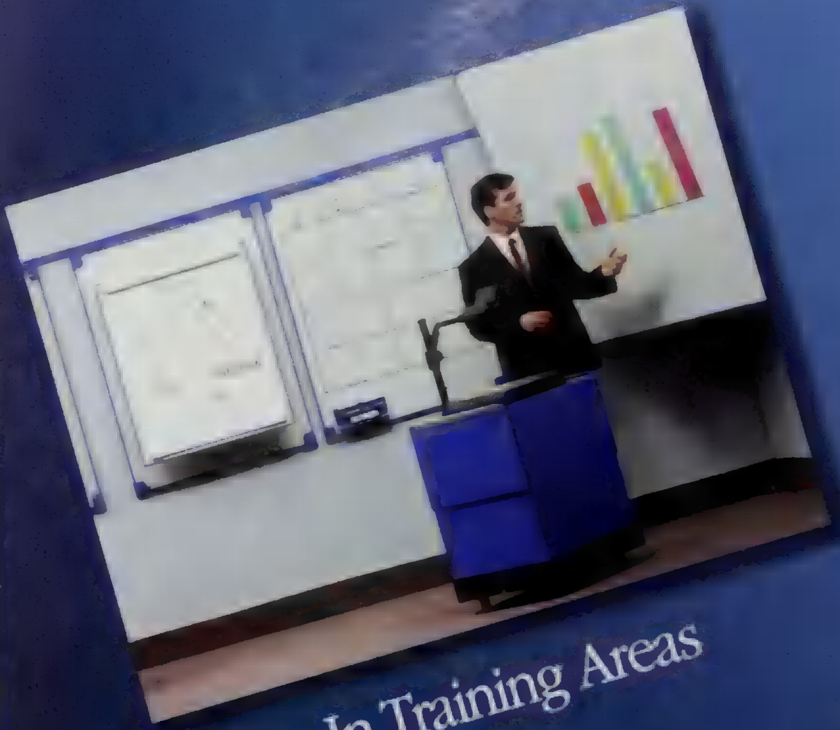

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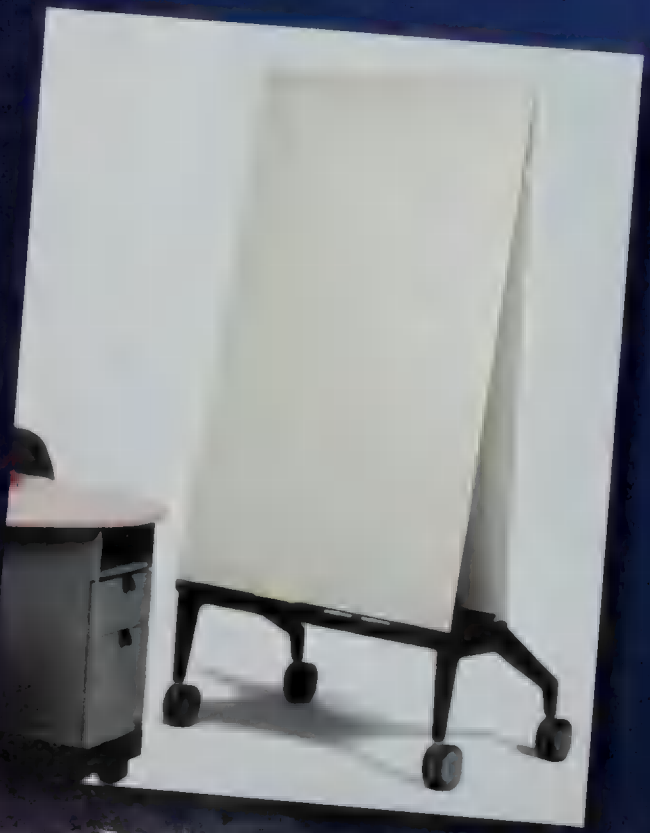

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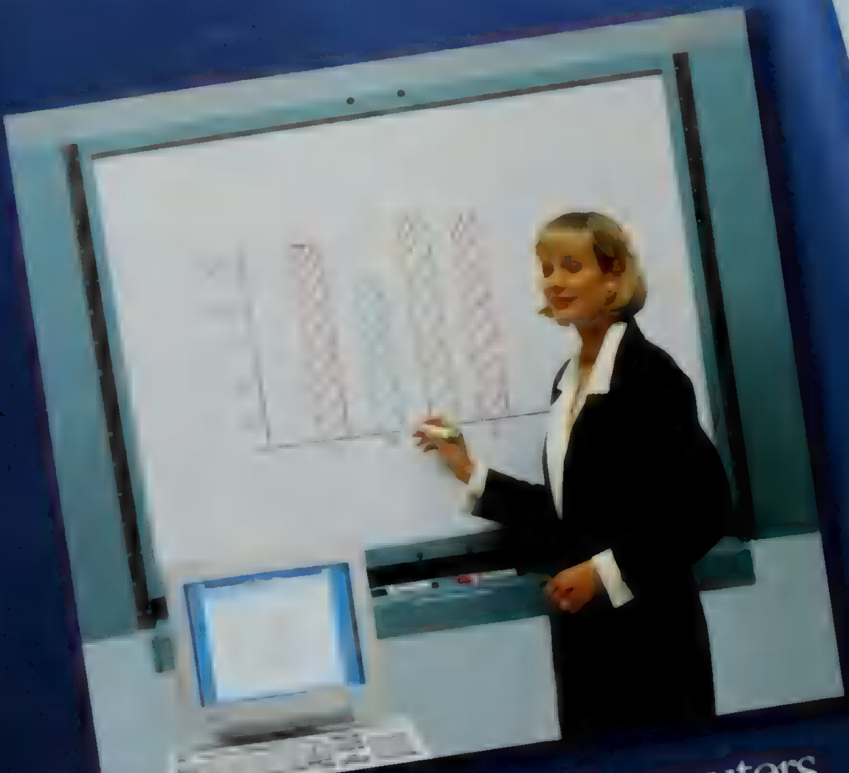

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Building Types Study 724/Leisure Facilities

Childhood dreams of fantastic places of the future have, for some architects, been realized—in a variety of ways. Robert Stern's Feature Animation Building for the Walt Disney Company in Burbank, California (page 72) was inspired, he says, by "growing up watching Disney cartoons." A red and pink corrugated metal facade along the freeway and a purple "sorcerer's hat" (actually a 40-foot-high cone that caps the office of Roy Disney, the head of the animation division) give a fairy-tale effect. Across the ocean, is Rem Koolhaas and his Office for Metropolitan Architecture's Grand Palais in Lille, France (page 88). Their city of the future relies, among other things, on high-speed trains, which can efficiently transport people from all over Europe to areas once considered remote. Euralille, a 173-acre transportation, living, and working development masterplanned by OMA is, says correspondent Claire Downey, "their testing ground," and the massive, astylistic Grand Palais "is defined by the transient links that exist in all cities." Transience, above all economic, is a familiar theme to inhabitants along the Mississippi River, a region examined in this month's building types study on casinos (page 100). According to *The New York Times*, in November, 1993 13 new operating casinos in Mississippi produced $80 million of revenue, helping unemployment fall to 4.2 percent from the previous year's 7.1 percent. Architect Coleman Coker reports on the architectural cost of the Mississippi gambling boom. Critic Robert Campbell examines the Ivy League campus work of Boston firm Kallmann McKinnell & Wood (page 82)—rarified fantasy worlds of their own. *Karen D. Stein*

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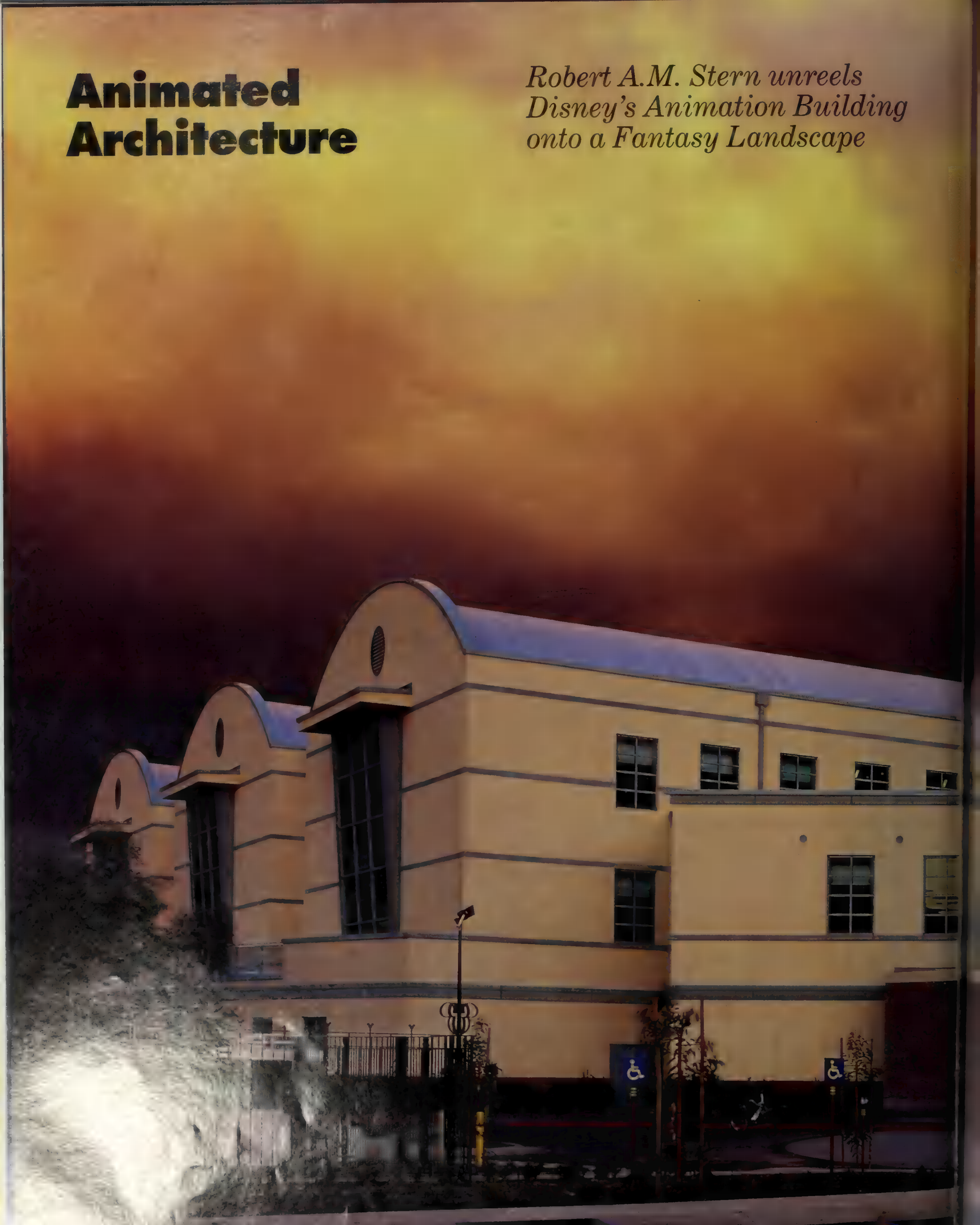
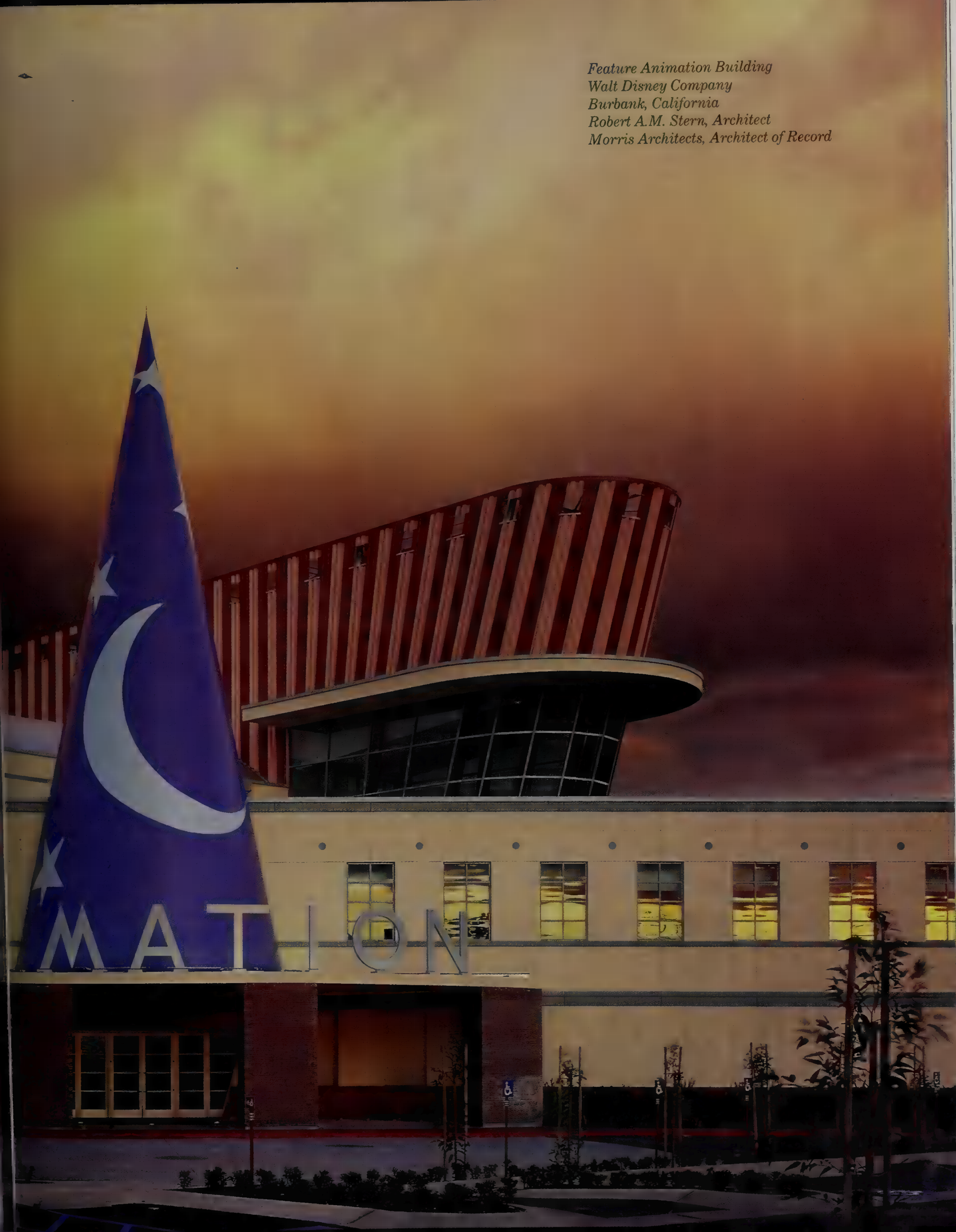
isted on page 125

Animated Architecture

Robert A.M. Stern unreels Disney's Animation Building onto a Fantasy Landscape



Feature Animation Building
Walt Disney Company
Burbank, California
Robert A.M. Stern, Architect
Morris Architects, Architect of Record



Robert A.M. Stern remembers growing up watching Disney cartoons, "which always took place in some fantastic city of the future." As a grown man with a large office, "I finally got to build that vision." His excuse was the Disney Corporation's need to house their highly successful animation department in bigger quarters "on campus" in Burbank, California. The 243,000-square-foot Animation Building now houses well over 500 animators and administrators who are busy turning out successors to *Beauty and the Beast*, *The Little Mermaid*, *The Lion King*, and this summer's *Pocahontas*.

The need to make some Disney Magic allowed Stern to create forms that depart from the more classicized language for which he has become famous. Like his 1989 Mexx Building in the Netherlands, the Animation Building combines the exuberant celebration of the freedom that modern technology gives designers. Integrating technology with consumer fantasies, the building arrests the senses while accommodating rational functions.

"Too bad you can't see the building from the freeway," Disney chairman Michael Eisner says, referring ironically to its fantastic facade, which in fact faces one of the busiest thoroughfares in California. The Animation Building is an abstract, sweeping billboard, complete with giant letters that spell out its name. Stern colored its corrugated metal facade with whimsical shades of red and pink, and capped the composition with a six-story replica of the sorcerer's hat Mickey Mouse wears in *Fantasia*. The Animation Building levitates from the site into fantasy.

Yet the structure is not what Robert Venturi would call a "building-board." Behind the sound-baffling facade that has already become such a local landmark that helicopters use it to locate problems on the freeway, there stands a row of stucco-clad vaulted bays where the serious animation work occurs. These may be cartoon versions of Peter Behrens's 1909 AEG Turbine Factory, an early Modern industrial icon, or possibly even Disney's own early studio buildings.

Behind these walls lie the acres of "cheap space" where the actual work goes on, and it is here the architect has worked his true magic. "I told Stern to make this space look like his own office: a big loft," comments Eisner, adding that he sees an analogy between the "backstage" production of films, and the studios where architects work. The interiors are simple broad corridors for the display of work in progress, enclosed production and meeting rooms, and acres of work space, whose black insulation paper studded with metal brads resemble a clear night sky.

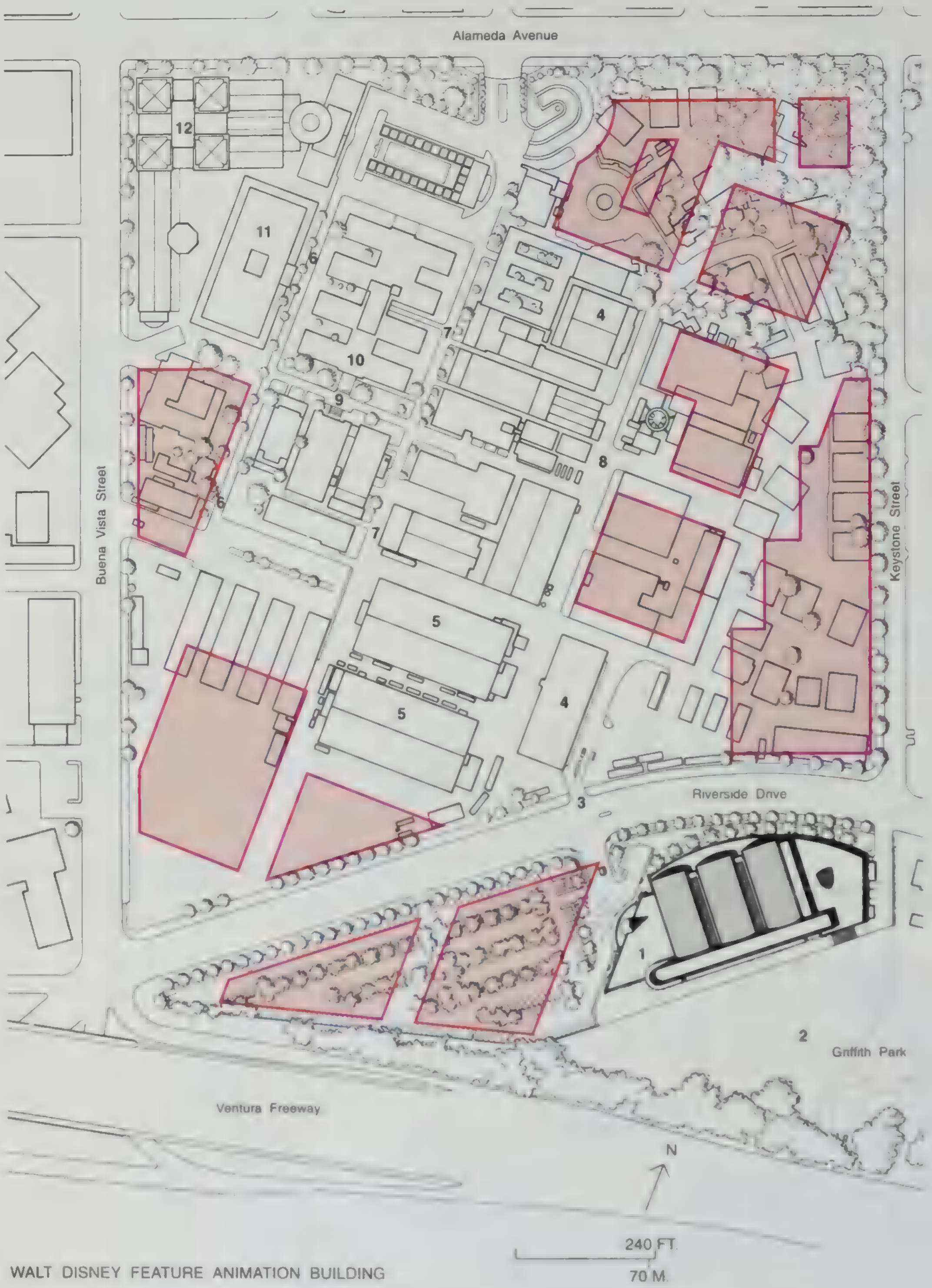
The cartoon world is extended to the Mickey Mouse tables designed for the building, and culminates inside the sorcerer's hat with the office of Roy Disney, who is head of the animation division. The 40-foot-high cone is topped by a skylight that offers a tilted perspective on the work going on in the Animation Building. This soaring, off-kilter vantage point helps one appreciate how architecture can create animated surroundings. Robert Stern has turned the fun of fantasy into an otherworldly structure. *Aaron Betsky*

© Peter Aaron photos

"I'm just being contextual," say Stern, of the building's arrestin form. He points out that the sit is at the edge of the Disney complex, where it borders a neighborhood of one-story single-family houses. The arc o the main facade is a billboard visible from the adjacent freeway, and also marks the direction of future development, which will one day culminate i 12- to 15-story buildings beyon the residential area.

ANIMATIO
2100

ANIMATION



WALT DISNEY FEATURE ANIMATION BUILDING

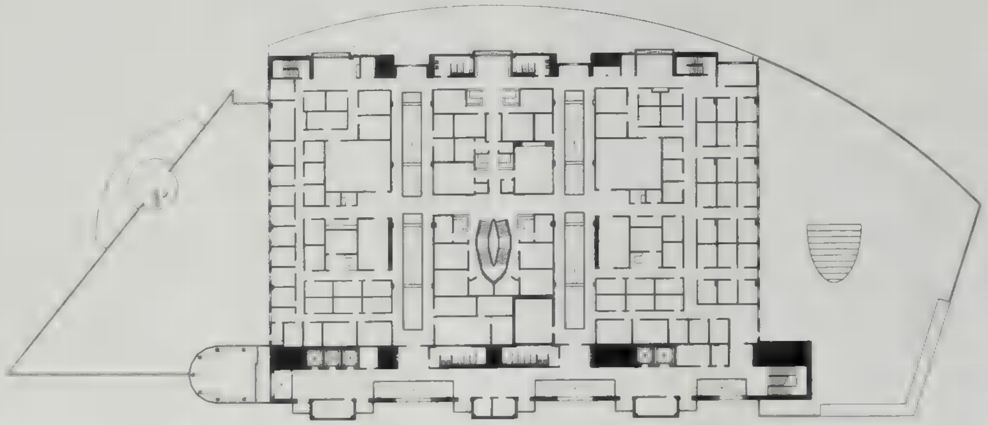
1. Animation building
2. Los Angeles city park
3. Studio lot gate
4. Production
5. Sound stage
6. Mickey Avenue
7. Minnie Avenue
8. Donald Avenue
9. Dopey Drive
10. Original Animation Building by Kem Webber
11. Roy O. Disney Building
12. Team Disney Building by Michael Graves
Note: colored areas indicate future buildings

"When I was growing up," remembers Stern, "Los Angeles meant one of two things: the glamour of Hollywood and Sunset Boulevard, and buildings that were slightly off, as if they were about to fall over. This building has a little bit of both qualities." The main facade addresses the freeway as a sweep of corrugated metal, but below this gesture more solid-seeming stucco forms shade the interior corridor and anchor the building to what is in reality a rather sylvan setting to the south, where an equestrian center and riding trails give some animators the opportunity to literally ride to work.

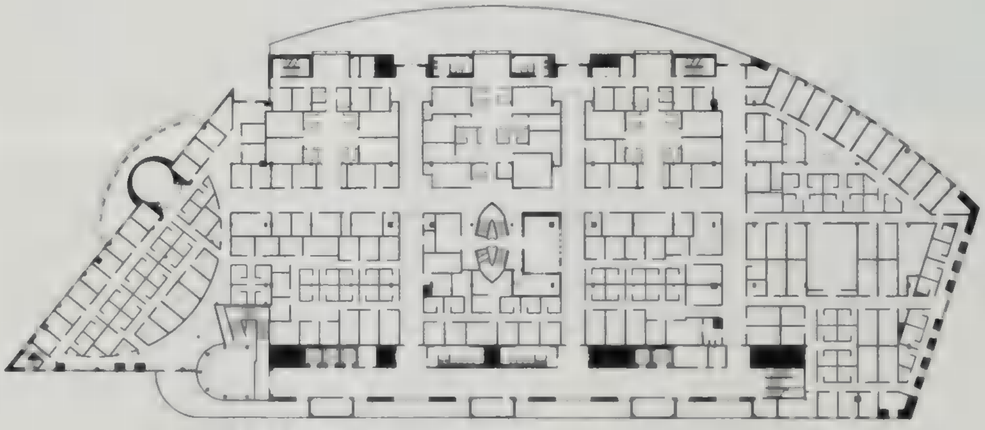
Meanwhile, the north facade blends in with the barn-like studio buildings of the rest of the Disney complex, which is anchored by Michael Graves's headquarters building on the northwest corner. Space for future expansion is currently the Animation Building's parking lot.

To control this composition, Stern uses the metaphor of a roll of film—including sprockets—unreeling itself across the site. Past an entry that resembles a neighborhood theater, the film becomes a pattern in the floor. It culminates in the tilted corner of the atrium, which sums up the grand ambitions of the structure. This area is all the general public will ever get to see of the interior.

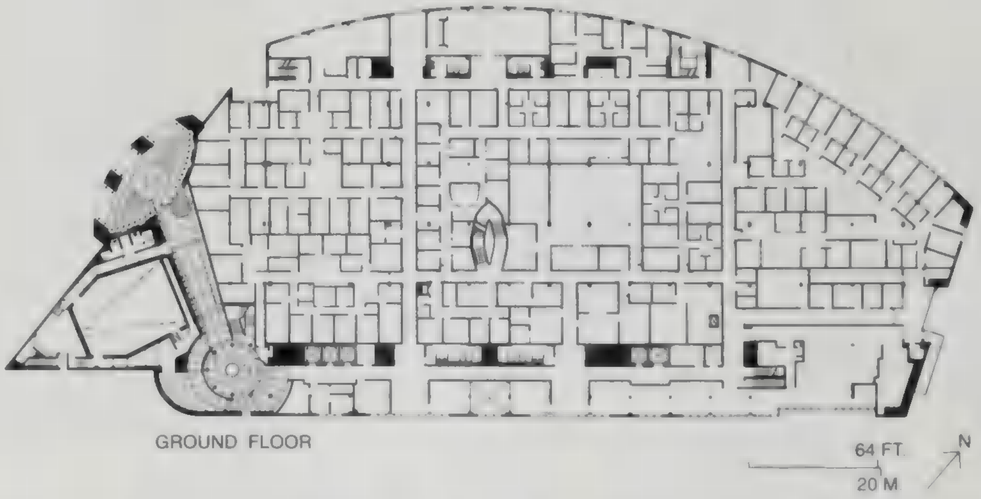
LION KING



THIRD FLOOR



SECOND FLOOR



GROUND FLOOR

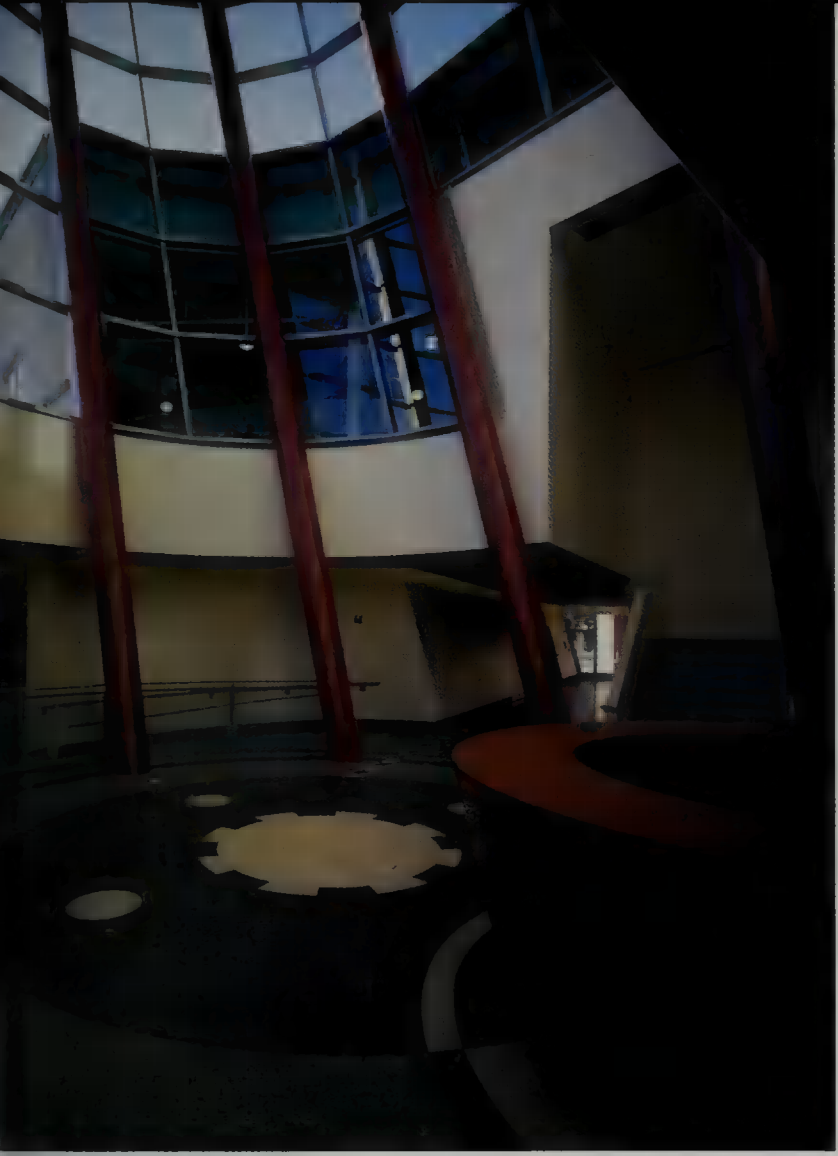
1. *Library*
2. *Lounge*
3. *Story room*
4. *Skylight*
5. *Balcony*
6. *Concourse*
7. *Atrium*
8. *Main story room*
9. *Terrace*
10. *Skylit corridor*
11. *Screening room*
12. *Projection room*
13. *Commissary*
14. *Conference room*

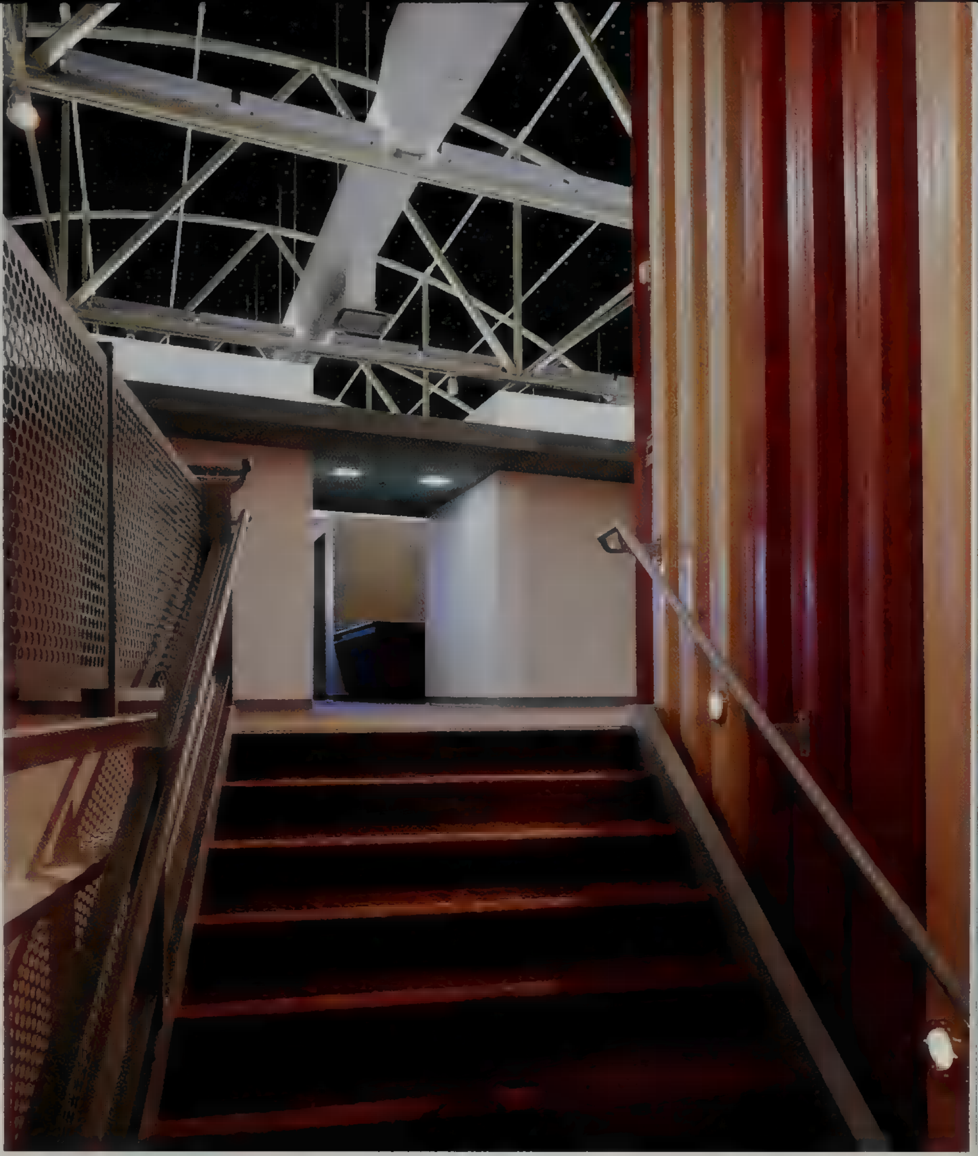
Up Close

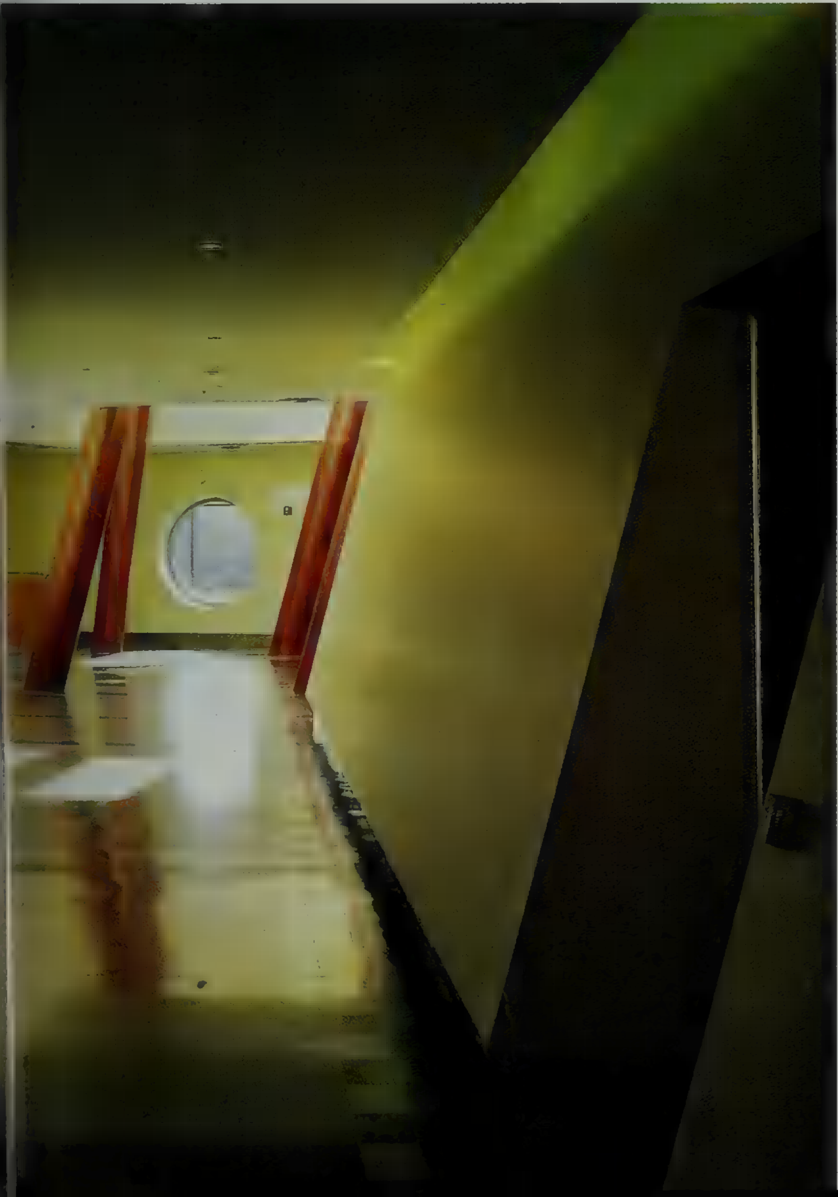
Drawing on the grid. The dense plan of the Animation Building reveals its size and complexity. This is no ordinary office building, but was designed to fit animators' rather specialized needs. George Lucas acted as a consultant in laying out some of the production spaces, to give designers information on how changing animation technologies might affect space configurations in the future. Yet in order to make personal contact simpler ("this is still a business where you have to work face to face," Eisner reminds a visitor excited by the automation of animation), Stern subdivided the bulk of the floor into a grid pattern that is even easier to understand because its major elements are three-story-tall, balconied shafts that penetrate the rows of studios, offices, and meeting places.

The grid is interrupted by larger conference rooms that act as gathering places. The suite of executive offices breaks from the clear order that controls most of the building to create a diagonal slice at the western edge, anchored by Roy Disney's office.

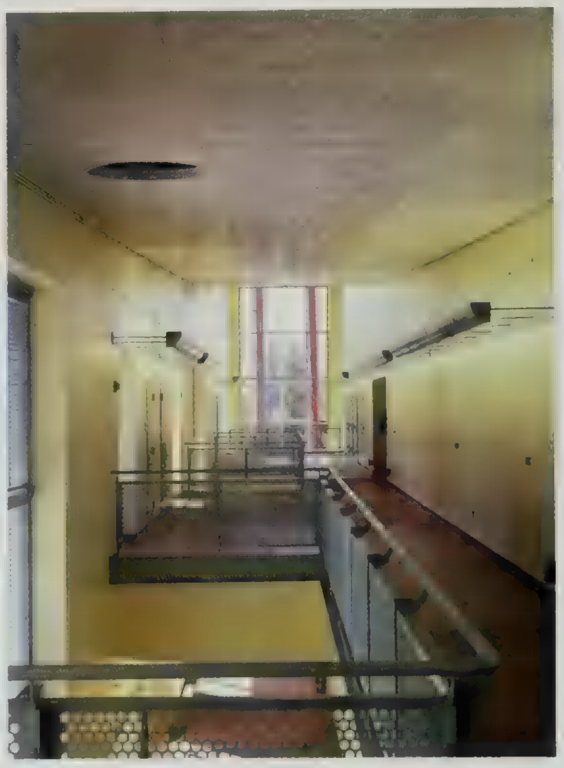
The amount of work done in the corridors, where drawings are displayed and discussed gave the architect the excuse to make the shared spaces of the Animation Building into generous places he likens to town squares—giving the impression he is trying to build Disneyland's Main Street on the Disney Campus. The black ceiling should make the animators feel as if they are already living in a fantasyland—a sense that even visitors will get when they enter th tilted skylight spindle that terminates the public route into the building.

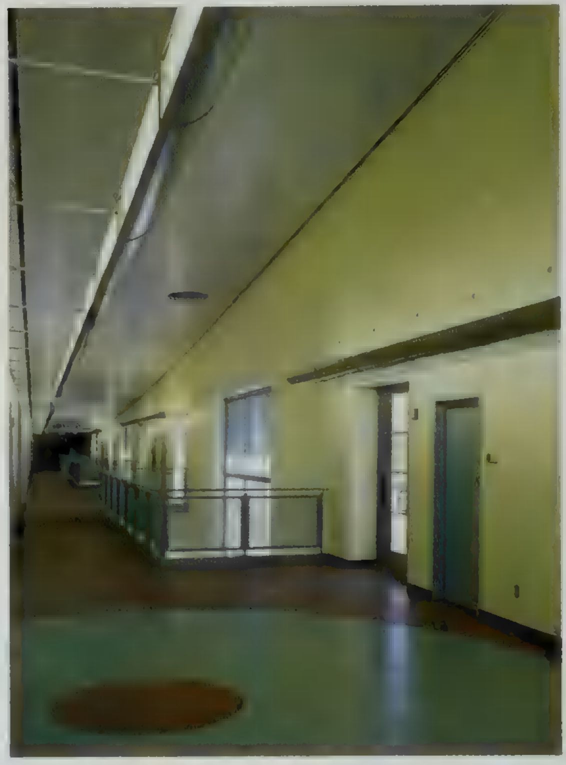






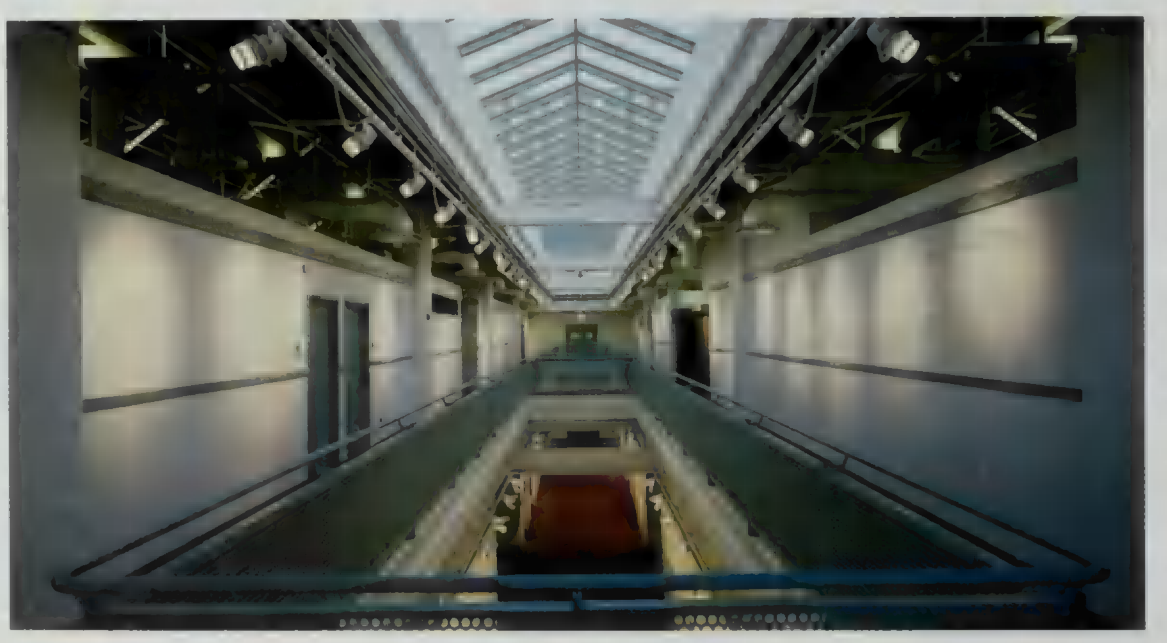
EXIT





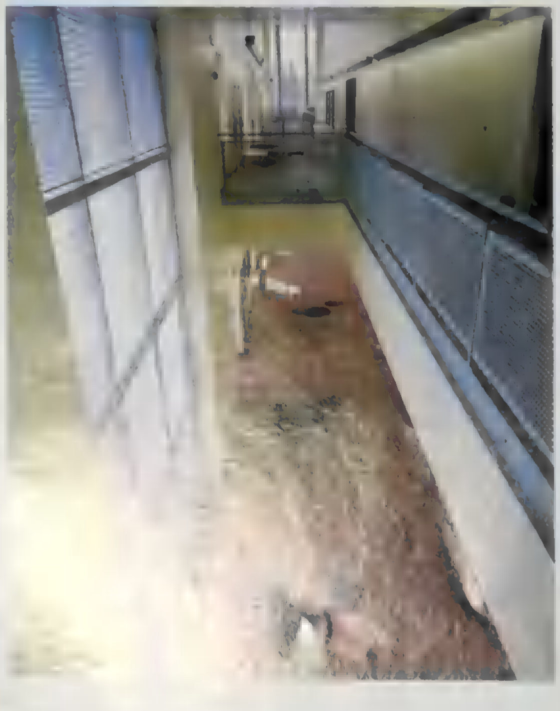
The front of the animation building is dominated by a broad corridor ("big enough to accommodate the creative mess here," says Stern) that is already filling with the high-tech clutter of modern movie making. Acting as both the main circulation corridor and a buffer to the freeway noise, it follows the line of electrical and air-conditioning equipment hidden behind the facade.

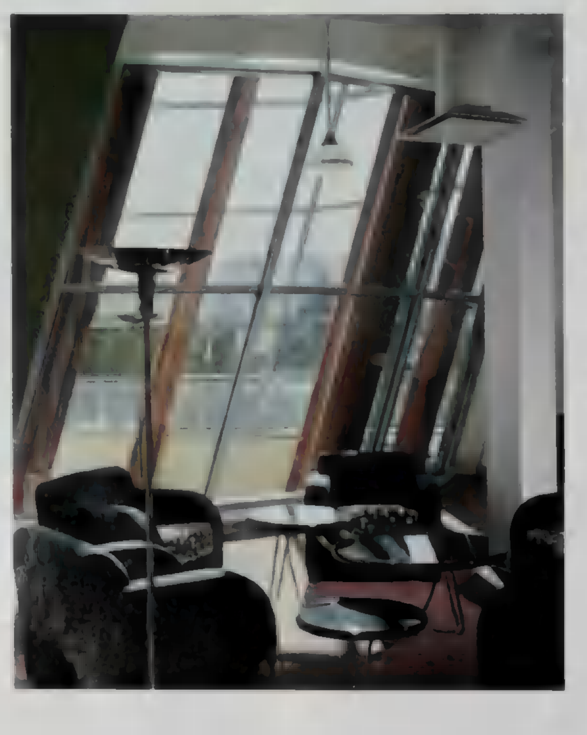
The main office floors stretch out perpendicular to this avenue as "streets" organized around "squares," where conference and screening rooms form the gathering spaces for this animators' city. Tack strips allow them to display and discuss their works in progress. In styling this environment, the architect picked up on what he calls the "California Modern" of the original Disney Studio buildings designed by Kem Weber in 1939, right down to the signing and colors that duplicate that original streamlined campus. The exception is Roy Disney's vertiginous office inside the sorcerer's hat, right.



Credits

Feature Animation Building
Walt Disney Company
Burbank, California
Client: *Disney Development Company*
Architect: *Robert A.M. Stern Architects—Paul Whalen, Barry Rice, architects-in-charge; Michael Jones, Geoffrey Mouen, architects*
Architect of Record: *Morris Architects—Donald Springer, partner-in-charge; William Vaughan, Carl Jacksits, project architects; Timothy Burnett, site architect*
Interior Designer: *Robert A.M. Stern Architects—Alex Lamis, Barry Rice, architects-in-charge; Pat Burns, interior designer; Valerie Hughes, Jane Whitford, Adam Anuszkiewicz, assistants*
Engineers: *De Simone Chaplin and Dobryn Consulting Engineers (structural); Cosentini Associates (M.E.P.); Psomas Associates (civil)*
Consultants: *Imero Fiorentino; Cosentini Associates (lighting); Charles M. Salter Associates (acoustics); CBA, Ltd. (cost and scheduling); Lucas Film Ltd. (screening rooms); SWA Group (landscape); Beck and Graboski Design (signage); Patrick Stein Associates (food service)*





Tradition Triumphs

By Robert Campbell

Universities represent, for most people, the time in their lives when they were most conscious of their physical surroundings, and the time when they lived in an environment that referred to the past."

Michael McKinnell is talking. He and I are touring from Cambridge to Princeton to New Haven, to visit three campus buildings designed by the firm of Kallmann McKinnell & Wood. McKinnell argues that each of his firm's buildings is different from the others because each is responding to the genius of a different place. "In a university setting," he says, "you're much more aware of the exterior quality and appearance of buildings than you are in other settings. Issues are heightened. University presidents, faculty, students—they care what the campus looks like, they worry about a tree being taken down. The alumni want the campus to look like what they remember, or think they remember. There's a yearning for a sense of continuity, for stasis and permanence, an environment that links us to the past, and perhaps to the future. Continuity is explicit in the university context. It's exactly the opposite of a place like Manhattan, where you find all these exquisite and expensive interiors, but they're placed against an urban background that is ignored or despaired of."

> *"Marx Hall is physically attached to an older building. . .it's like a new engine on an existing architectural train."*

Harvard, Yale, and Princeton are indeed very different. Although I realize that any attempt to characterize them will ruffle some feathers, I'm going to try. At Yale, you always have the sense of an institution trying to create a private world of interior quads. The distinction between town and gown is in this sense emphasized, and you come away with a sense of a Trollopian world of plump towers and serene cloisters, of rich materials and nostalgic evocations. But at the same time, Yale responds to a powerful, very American local order, namely the nine-square grid of the New Haven city plan. Yale buildings obsessively recapitulate the grid in their rectangular closed quads. And they stretch themselves out thin, to shape the streets of the town. The very first Yale building extruded itself to a length of 162 feet with a width of only 23 feet, so as to line the New Haven Green with as much facade as possible.

KMW's Bass Hall is a part of this world. It's a long building that joins with others to shape a closed quad. In program, Bass is a row of biology labs on its north face, a row of service spaces down the [illegible] and a row of faculty offices on the south. It bridges between [illegible] buildings, one modern, the other Tudor. At the opposite [illegible] is Philip Johnson's famous Kline Science Tower. [illegible] this quad a "temenos," or precinct surrounding a [illegible] and he defined three sides with a beefy arcade. The architects respond to these demanding constraints with a building that addresses them all, yet maintains its integrity. Up here on a hilltop, away from the street grid, the New Haven block reformulates itself. Bass closes the quad with the assurance of a door clicking shut. The horizontality of the flat, serene, space-defining south facade is articulated by a firm continuous eyeshade that parallels the Johnson arcade below. This facade contains professors' offices, their windows looking down to the quad and out to the New Haven skyline. Characteristic Yale brick and sandstone achieve the reddish-brownish late Victorian color of Kline and so many other Yale buildings. Facing north, away from the quad, is Bass's lab facade, rendered not horizontally but vertically. Here the panels of glass and brick suggest the shafts of lab services inside, recalling Louis Kahn's Richards Labs at the University of Pennsylvania. The brick panels narrow as they rise, and the windows widen, as in Kahn's Exeter Library. You're reminded that the floor plan, too, with its ranks of served and servant space, is Kahnian, rather like the plan of the Salk Institute, where—same as here—the professors look inward to a courtyard and a far horizon, while the labs face outward to the immediate surroundings.

Princeton is a different world. Built on a less flat site than Yale or Harvard, it becomes, especially as you move farther from the town side, an experience of paths and turns, of climbs and hikes—an episodic world, a quest through a landscape, an orienteering expedition in which you sight your way by the buildings. Princeton's architecture is more intimate, more village-like in scale, more light-hearted somehow, than either Harvard's or Yale's, and there is no governing geometry like the New Haven street grid, no hierarchic center like Harvard Yard and Harvard Square. Because of the lack of a larger order or style, you tend to notice each separate building, even each part of each building, and the buildings often respond by developing idiosyncratic detail.

Marx Hall, at Princeton, is a new home for the philosophy department and a Center for Human Values (see following pages). The program includes faculty offices, meeting rooms, and a library. Marx is the most deferential of the three KMW buildings, the least assertive of a new presence. In part, that's because it's physically attached to an older building called 1879 Hall. Marx presents itself very much as an extension, even a replication, of 1879 Hall: it's like a new engine on an existing architectural train. It imitates the older building's gables, bay windows, limestone water and string courses, and English-bonded red brick, but then declares its independence by means of the windows, which are crisply articulated in steel in an almost Miesian manner, and big enough to give Marx just the hint of a toy-like, slightly theatrical scale. Marx works effectively to shape its corner of the campus. It helps enclose a green space that previously leaked out badly here. And at its northern end, Marx rises into a small tower of seminar rooms, a gabled tower with exactly the right degree of modest assertion to enable it to form one gatepost—the other is McCosh Hall across the way—of a major pedestrian entrance to this part of the campus. The little tower is rotated slightly, to align with McCosh and with a wide path called McCosh Walk. More than the other buildings, Marx is a completion rather than a declaration.

Three buildings by Kallmann McKinnell & Wood, at Yale, Princeton, and Harvard, respect the genius of each place.

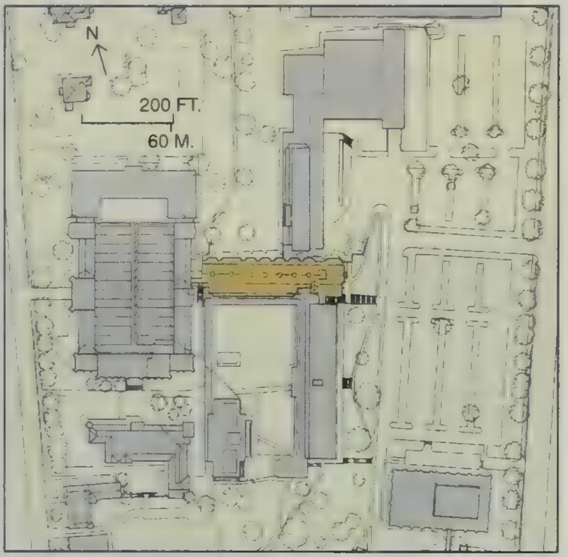
Harvard is still another story. Harvard's essence is its way of opening itself to the community; town and gown there tend to interdigitate. The characteristic motif is the three-sided quad, open at all its corners and, on the fourth side, to the town, a motif that harks back to Harvard's anti-Anglican, Puritan beginnings. Harvard was never meant to be a cloister. "Harvard was meant to serve the community and be a part of it, a purpose for which inward-turning groups of buildings were inappropriate," says one scholar. Thus the essential Harvard emerged, in Harvard Yard, as a group of separate buildings of simple prismatic shapes, standing slightly apart from one another on a plane of grass beneath a canopy of trees, always placed so the view to something beyond remains open, and connected by direct angled footpaths that express the movement of the students. Most of the architecture is simple, too, characteristically Georgian or neo-Georgian in style—"raw and bold brick edifices," as critic Montgomery Schuyler, who hated them, wrote in RECORD in 1909.

Hauser Hall is a five-story pile of Law School classrooms and professors' offices, made of red brick trimmed in white limestone and red granite (see following pages). It's a typical Harvard free-standing box, defining an open space by confronting but not actually completing it. Hauser's site is important, facing south across what was a nondescript lawn known as Holmes Field. Hauser's most prominent features are a jutting roof that looks like a visor and an entry archway that looks like a mouth; they create an almost military frontality, like that of a barking sergeant, that seems to call Holmes Field and its disparate buildings to attention. "Shape up," Hauser tells the space in front of it. Around in back, by contrast, Hauser is configured into a curve, thus neatly solving the problem of how to address the multiple arcs and angles of the Harkness Commons graduate center, by Walter Gropius and The Architects Collaborative.

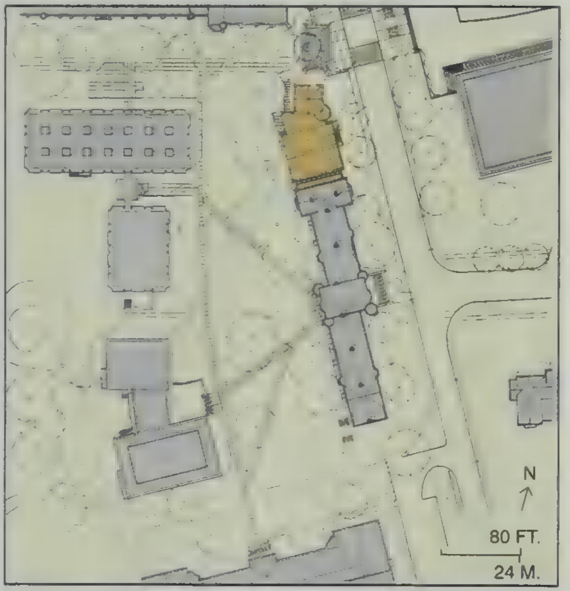
Everywhere, the craftsmanship is superb: in its materiality this is a massive and weighty building, yet one that is finely argued. Some of Hauser's details remind you of H. H. Richardson, who designed the law school's first home—nearby Austin Hall. But KMW's version of Richardson is carefully muted, flattened, abstracted: it's a memory of Richardson, not a revival. And the Richardsonian brick and stone are boldly invaded, on the main facade, by tall metal-and-glass bays that push forward rudely from inside the building. More, the bays are stacks of windows for professors' glass offices where the professors, with their computers and modern ways, are new wine in the old bottle of Harvard law school. Even the limestone is dense with fossils: another metaphor for the integration of new and old.

A university is a paradox. It must hoard the wisdom of the past in the collective memory of its libraries and scholars, but at the same time it must go about the business of inventing the future in the experiments of its laboratories and creative thinkers. More than most architects, Kallmann McKinnell & Wood grapples with that paradox, and in so doing redeems the notion that there can still be such a thing as time and place in the contemporary world.

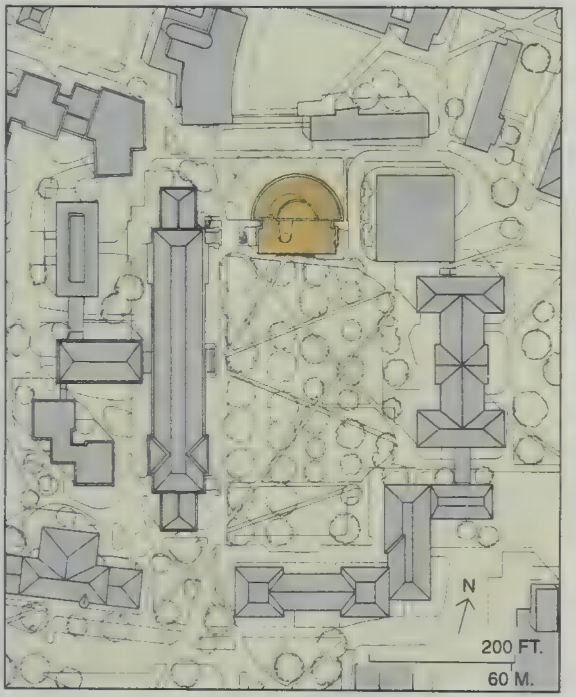
All three university buildings define outdoor space, but in different ways and using varied programs. At Yale. Bass Center (biology) completes a very eclectic quad, punctuated by Philip Johnson's 1966 Kline Science Tower.



At Princeton, Marx Hall (philosophy and human values) extends an existing Tudor structure northward to provide an anchor for a key corner of the campus.



At Harvard, Hauser Hall (law) commands but doesn't enclose a formerly shapeless quad, while the curved rear section responds to the angles of the Gropius/TAC Graduate Center complex (north of Hauser, partly visible on site plan).



Bass Center for Molecular Biology

Yale University,
New Haven, Connecticut
Kallmann McKinnell & Wood
Architects, Inc.

Front and back of Bass Hall are very different. Facing south, toward the quad *(1)*, Bass provides a firm, shaded horizontal wall to enclose the outdoor space. Behind this facade lie faculty offices which, on the upper floors, enjoy long views of the New Haven skyline. The rear facade *(2)* contains labs and is expressed with more verticality, suggesting the mechanical service shafts inside, in a manner recalling Louis Kahn's Richards Labs at the University of Pennsylvania.

Playful elements at corners serve as knuckles, allowing Bass to join comfortably with neighboring buildings of very different styles. "Bridge of Sighs" *(3)* links Bass with an older Tudor building and forms a typical Yale arched entryway. Old Weathervane Tower (seen in *3*) is the source for the shape of a new copper hat (at

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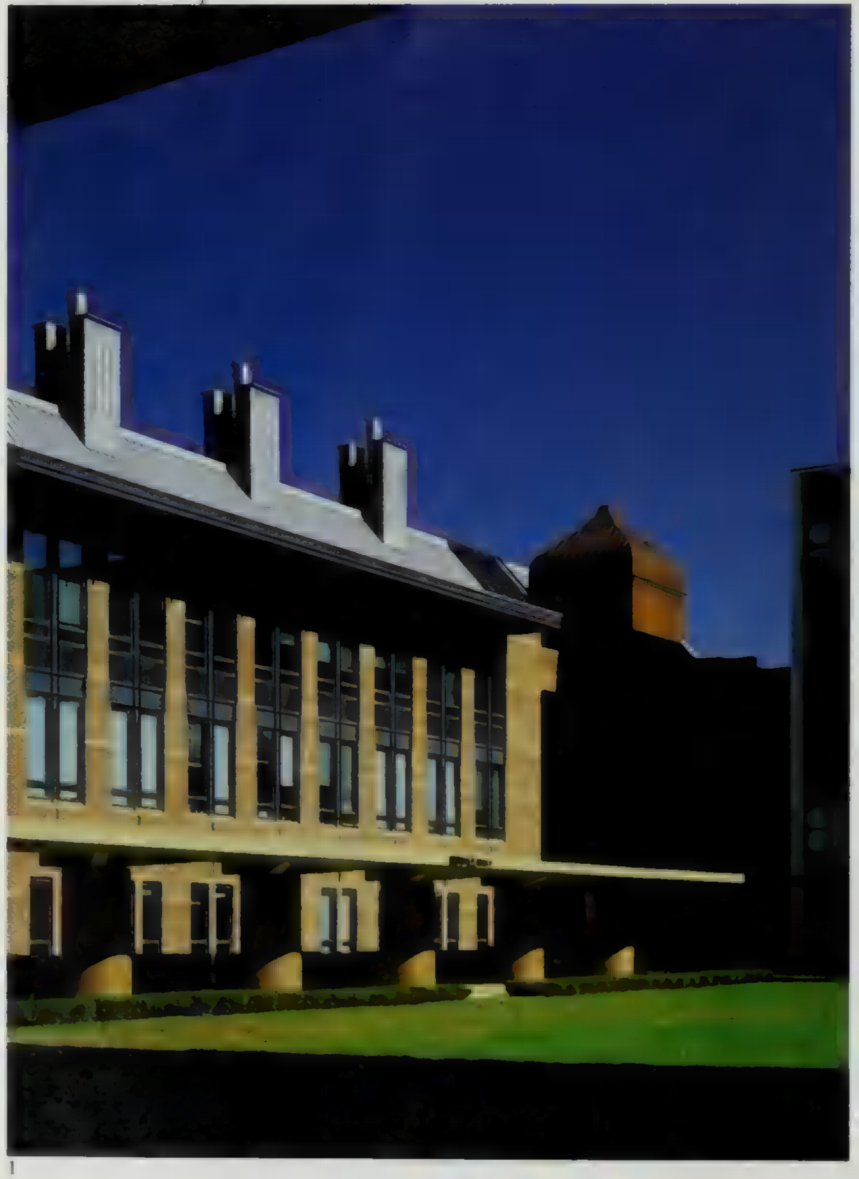
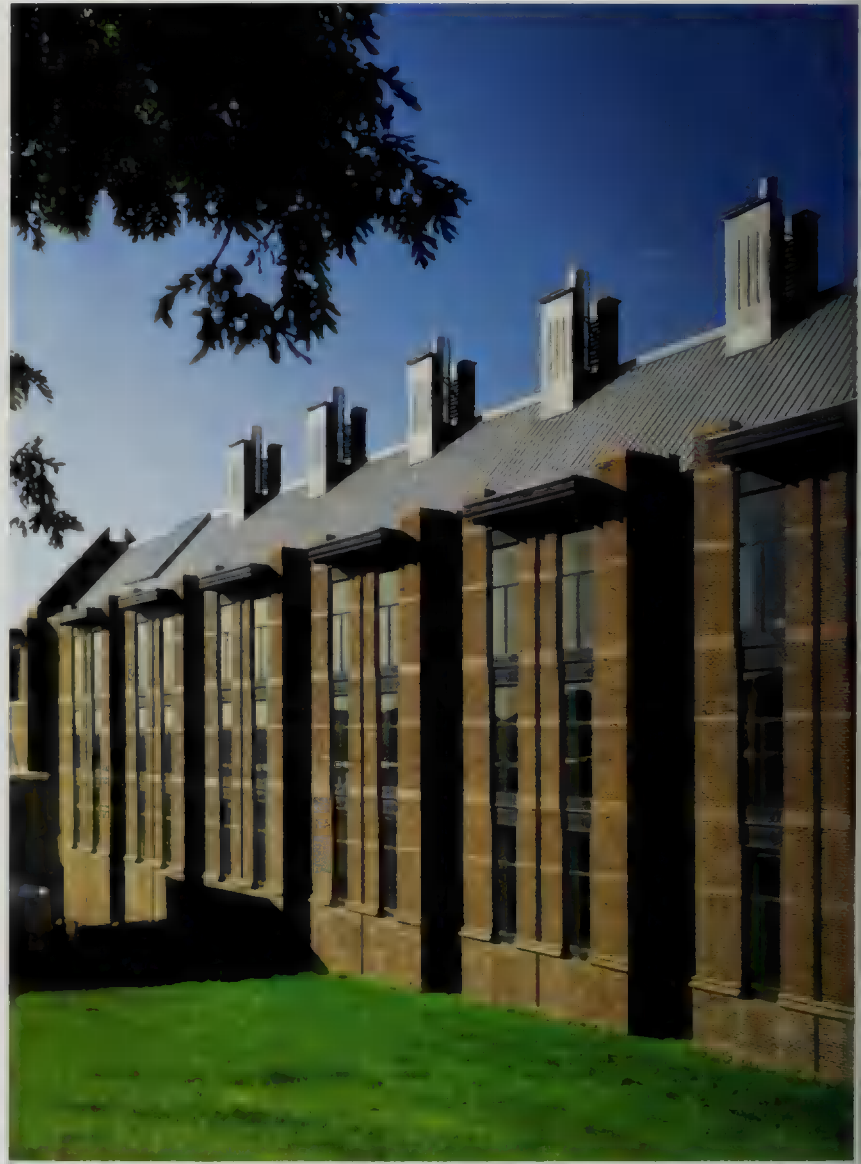


1



2

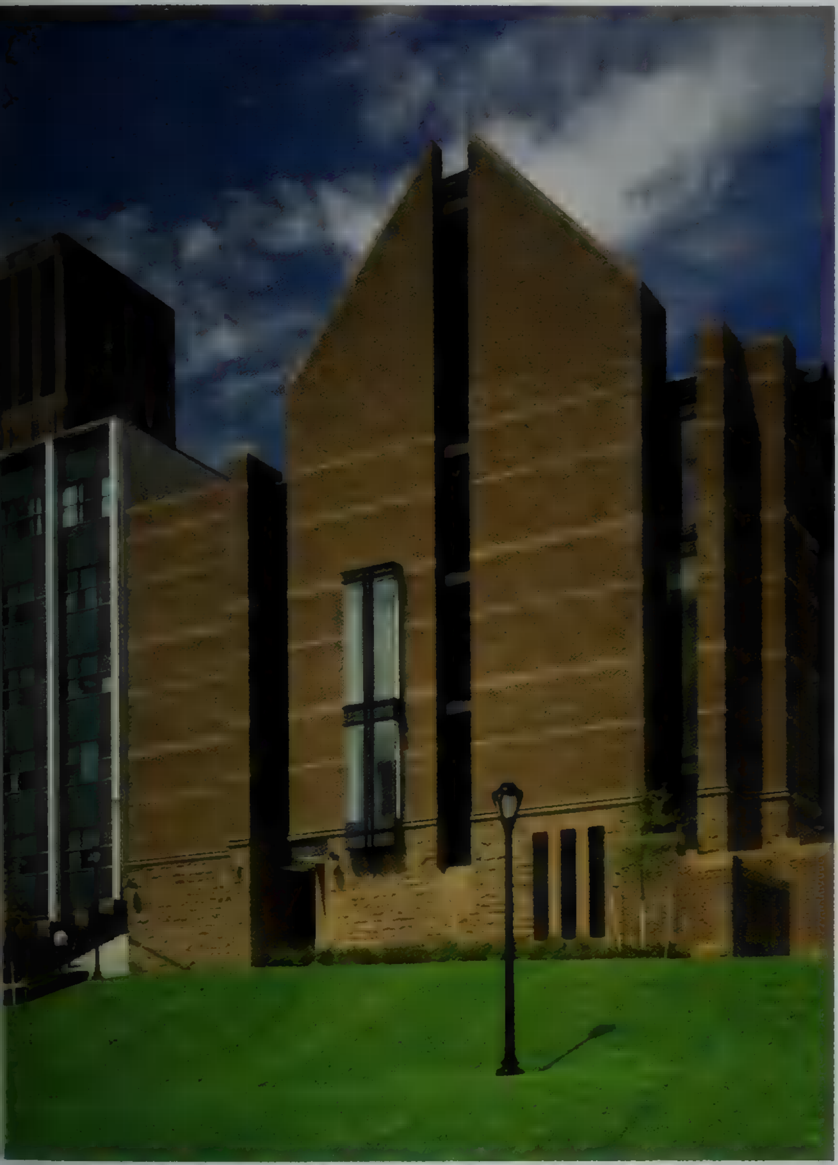
3

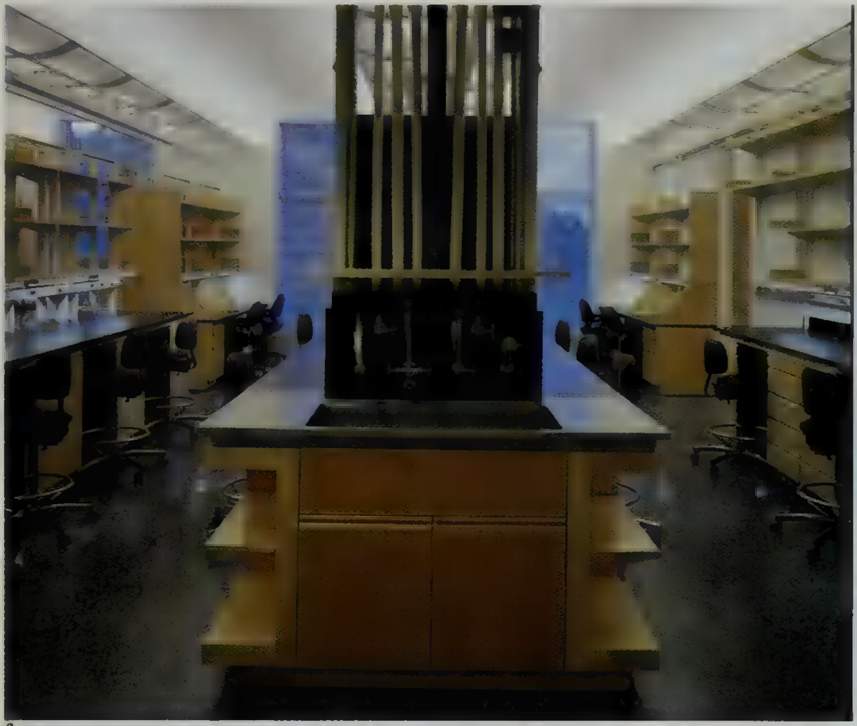
4

ight in *1*), which tops off the ele-ator shaft. A round column of hilip Johnson's Kline tower rames the view of the quad *(4)*. een from downhill *(5)*, Bass ises in a craggy, slotted and abled mass, as if for defense.

he ground plan (below) reveals ogical ranks of labs, service paces, and offices. Upper-floor lans are similar, but with more pace for informal social contact, and with corridors that extend on bridges to connect with older buildings at both ends. A typical lab *(6)* is well lit by translucent coves; desk space is placed against window walls to enjoy the view. A seminar room *(7)* and classrooms fill corners opposite the main stair. Materials are brick, reddish brownstone, cast stone, and lead-coated copper at the roof.

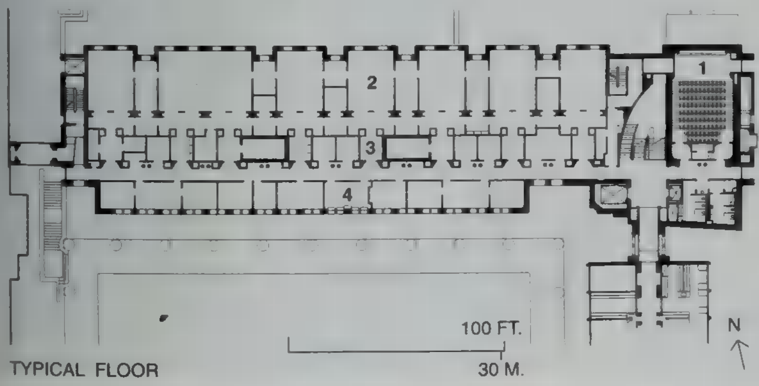
Credits
Nancy Lee and Perry R. Bass Center for Molecular and Structural Biology
New Haven, Connecticut
Architect: *Kallmann McKinnell & Wood Architects, Inc.*
Engineers: *Martin Horton Associates (structural); Van Zelm, Heywood & Shadford (mechanical, electrical, plumbing, and fire protection)*
Construction Manager: *Turner Construction*





6

1. Lecture hall
2. Laboratories
3. Lab support
4. Faculty offices



7

Louis Marx Jr. Hall Center for Human Values

Princeton University,
Princeton, New Jersey
Kallmann McKinnell & Wood
Architects, Inc.

Marx Hall responds to the smaller, more broken scale of Princeton. It picks up the gabled skyline, limestone trim, and red-brick bond of the attached older neo-Tudor building, then transforms these motifs into a contemporary expression with large windows framed in steel (*1* and *2*). At the north end, Marx rises to a miniature tower of seminar rooms, rotated to frame a key entrance to the campus *(3)*.

Credits
Louis Marx Jr. '53 Hall, Center for Human Values
Princeton, New Jersey
Architect: *Kallmann McKinnell & Wood Architects, Inc.*
Engineers: *Lim Consultants, Inc. (structural); Cosentini Associates (mechanical, electrical, plumbing)*
Construction Manager: *Humphreys & Harding, Inc.*

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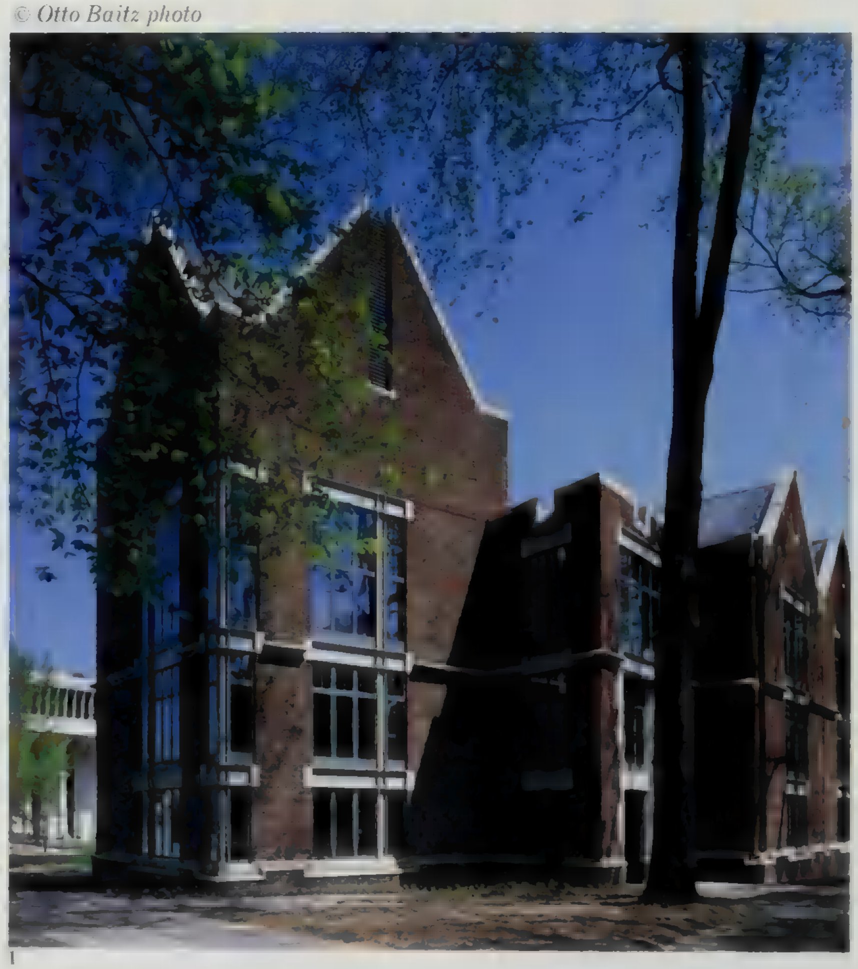

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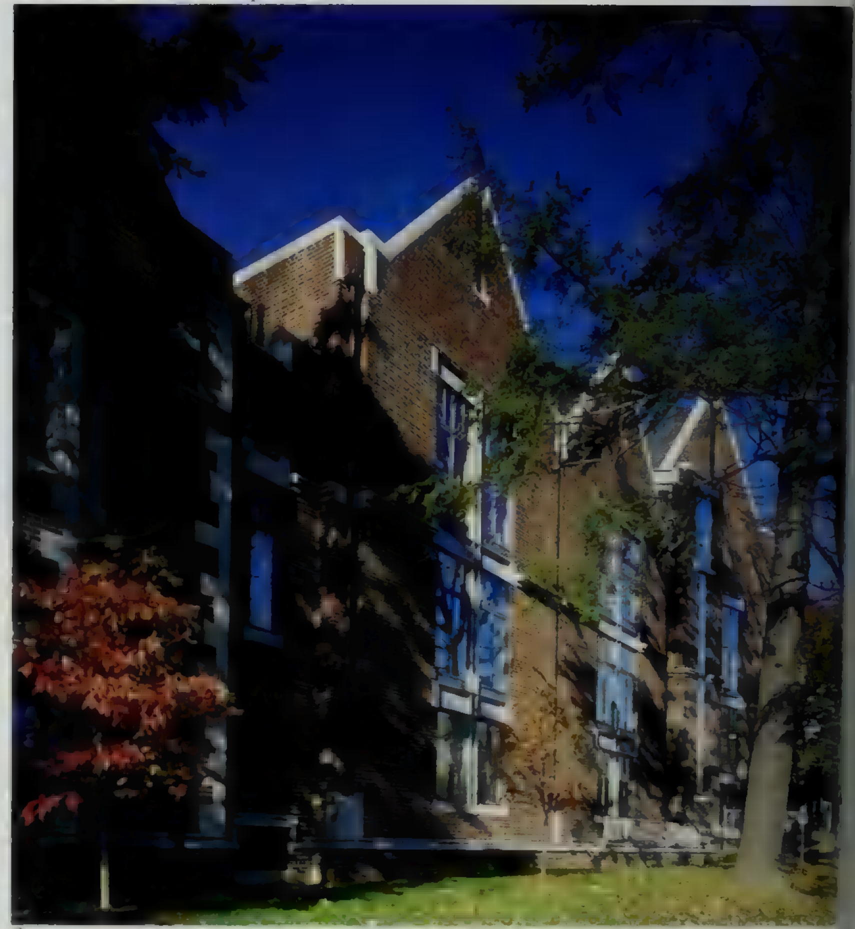
© Peter Vanderwarker photos



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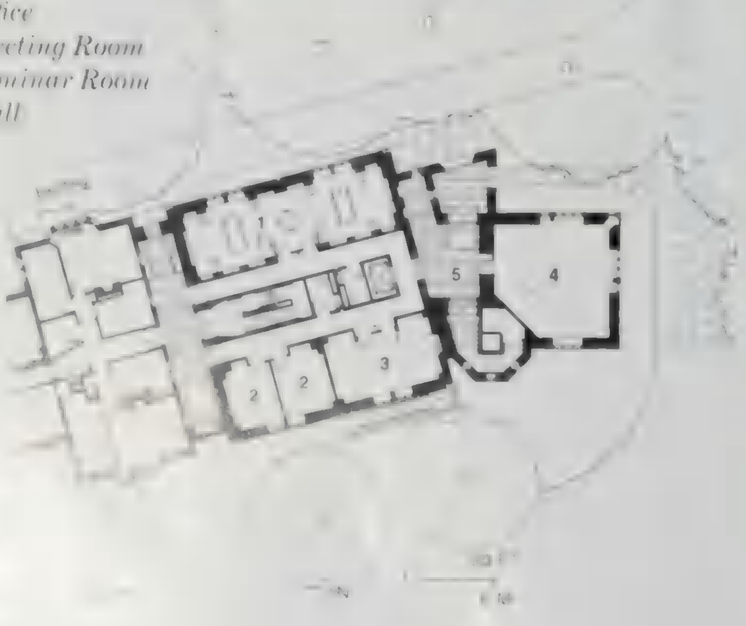
1. Library
2. Office
3. Meeting Room
4. Seminar Room
5. Hall



3

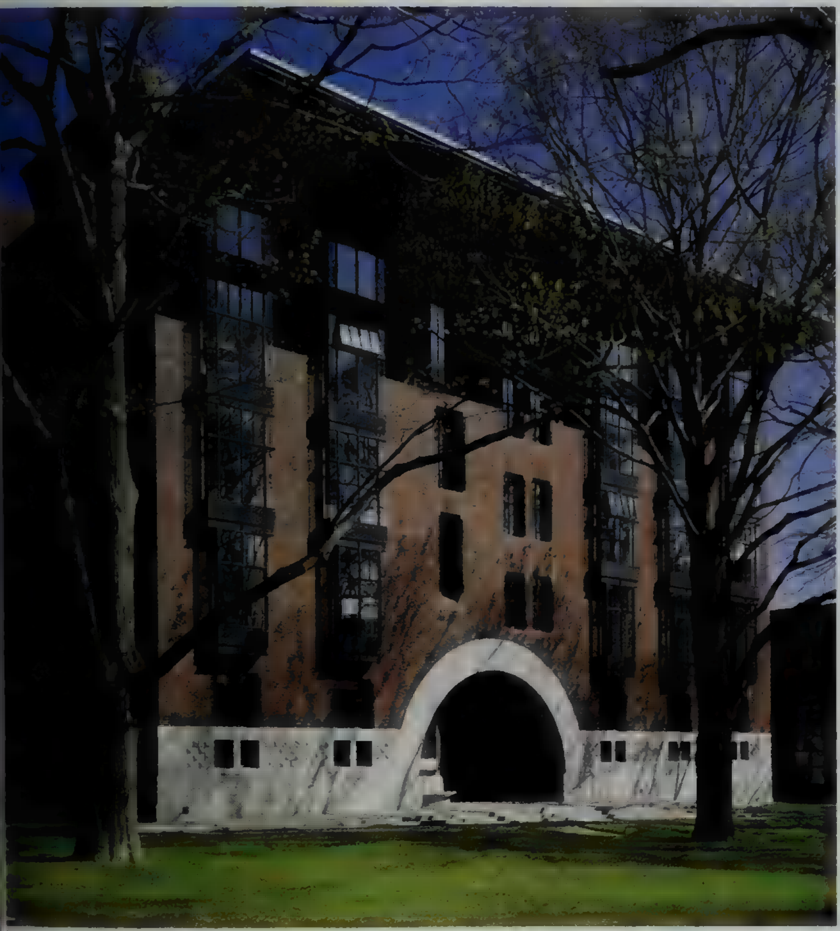
Hauser Hall, Harvard Law School

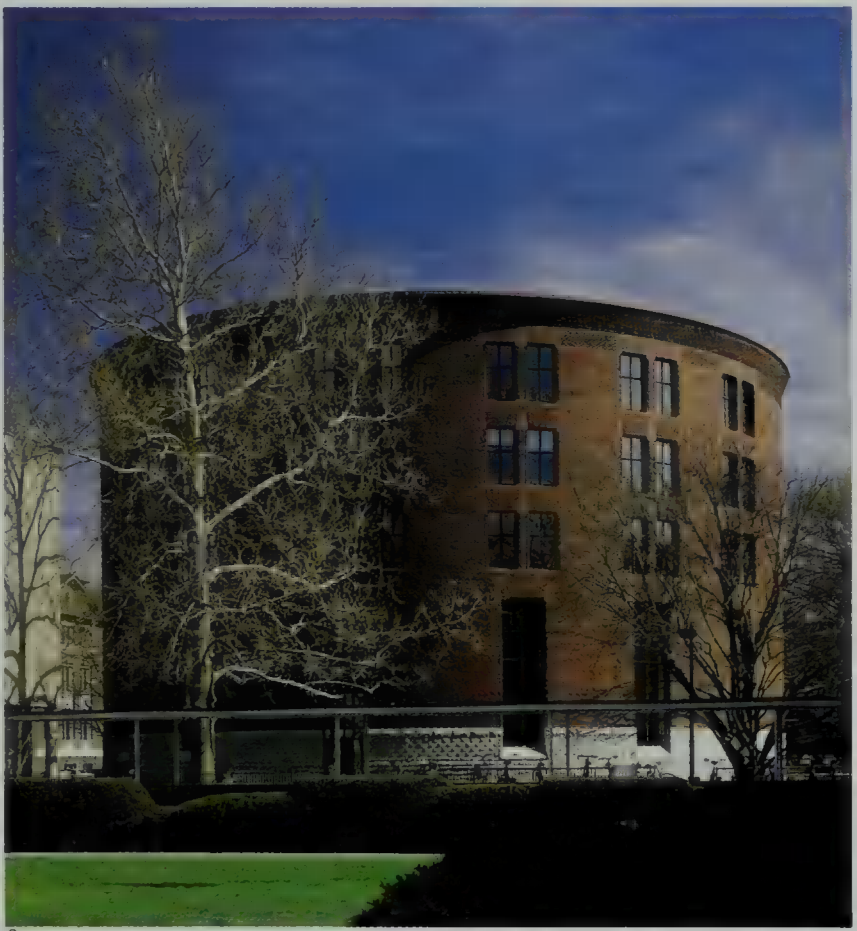
Harvard University,
Cambridge, Massachusetts
Kallmann McKinnell & Wood
Architects, Inc.

Hauser Hall respects Harvard's tradition of free-standing buildings. South facade *(1)* mixes memories of Austin Hall by H. H. Richardson and other neighbors to knit together a disjointed part of campus. A curved rear wing *(2)* draws viewers past the building toward other parts of campus in typical Harvard fashion. Plan reveals Richardsonian entrance. Detail *(3)* displays rich craftsmanship in limestone and brick.

Credits
Hauser Hall, Harvard
Law School
Cambridge, Massachusetts
Architect: *Kallmann McKinnell & Wood Architects, Inc.*
Engineers: *Weidlinger Associates (structural); TMP (hvac, plumbing, fire protection); Lottero & Mason Associates, Inc. (electrical); Bryant Assoc. (civil)*
General Contractor:
Daniel O'Connell's Sons

© Steve Rosenthal photos





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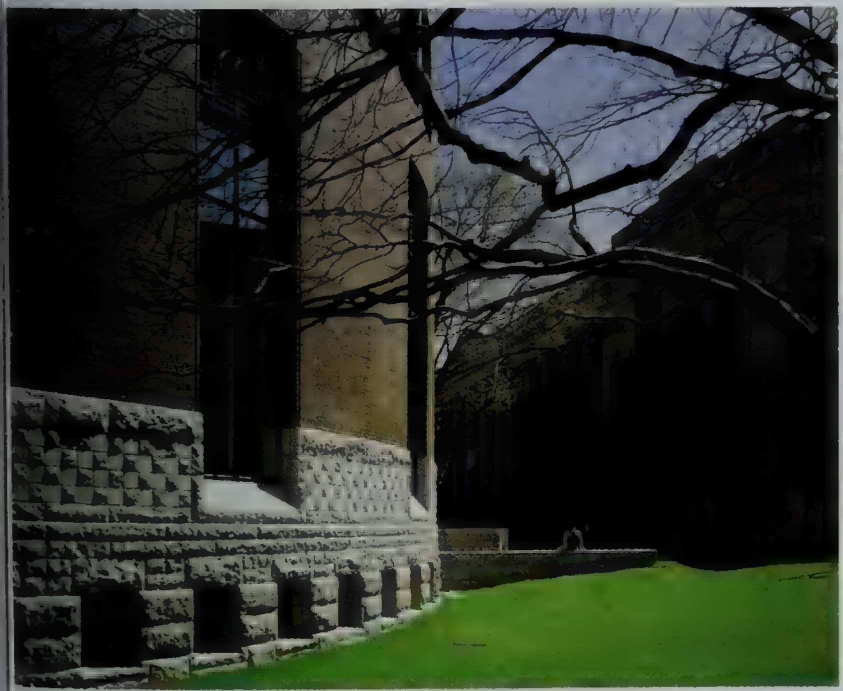
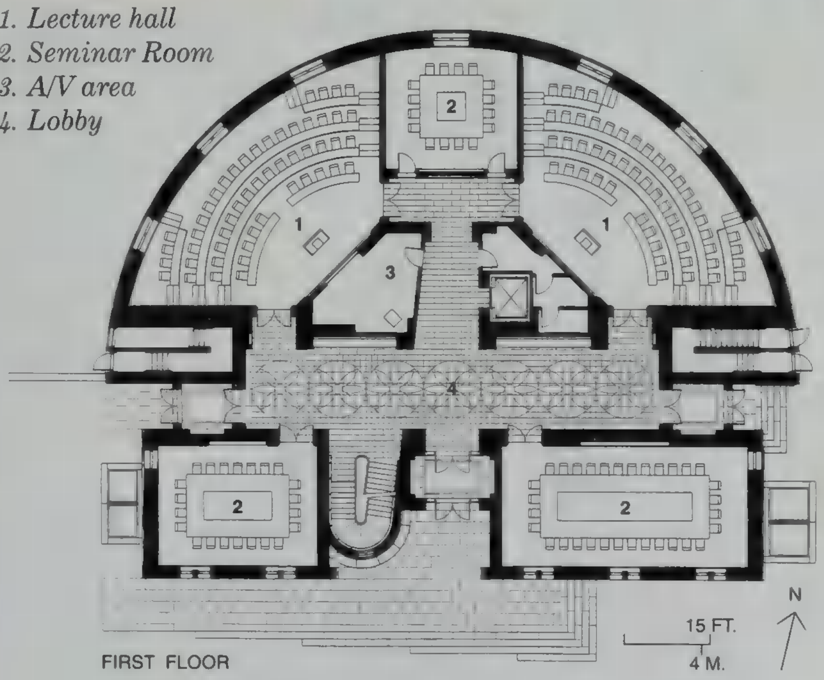
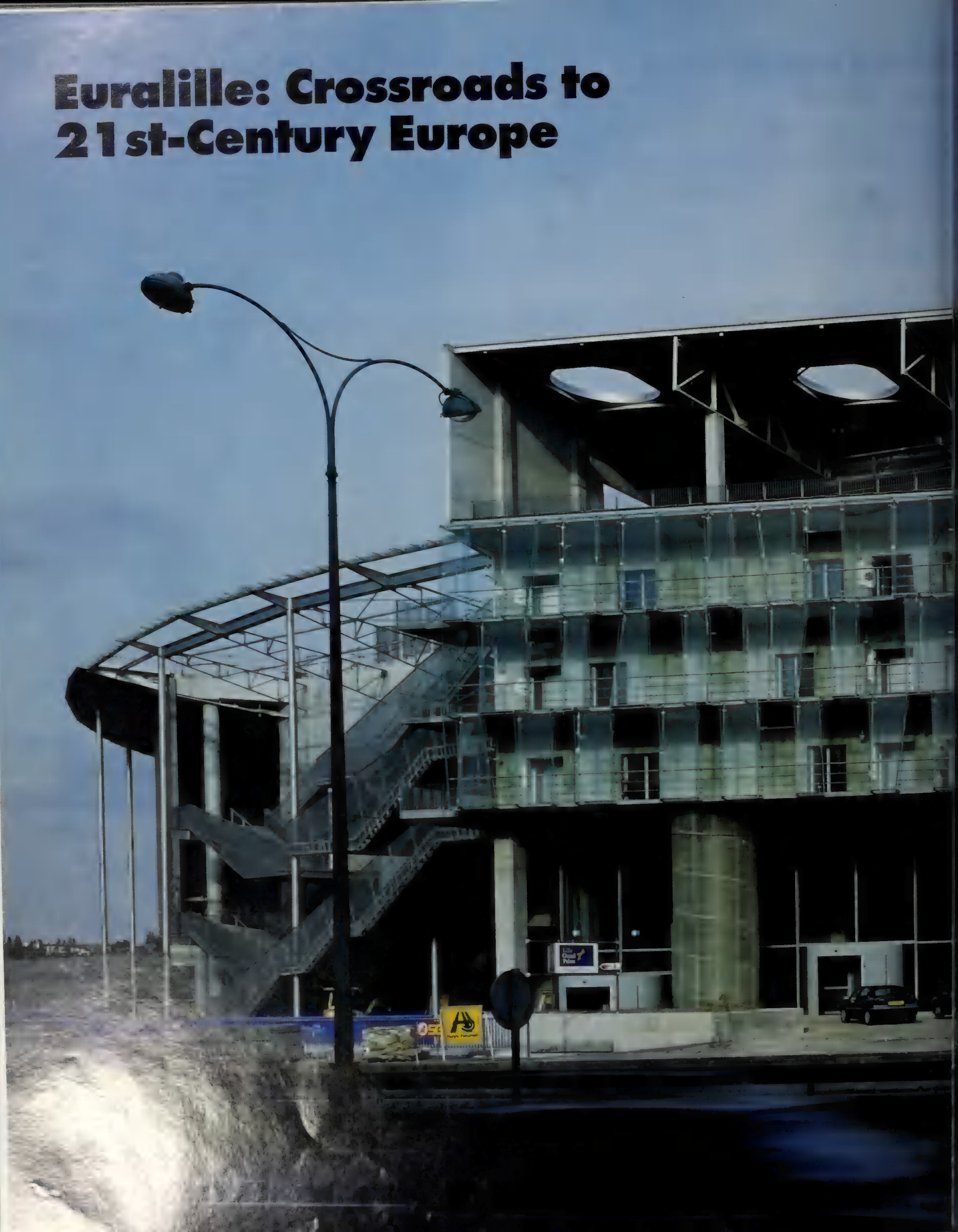


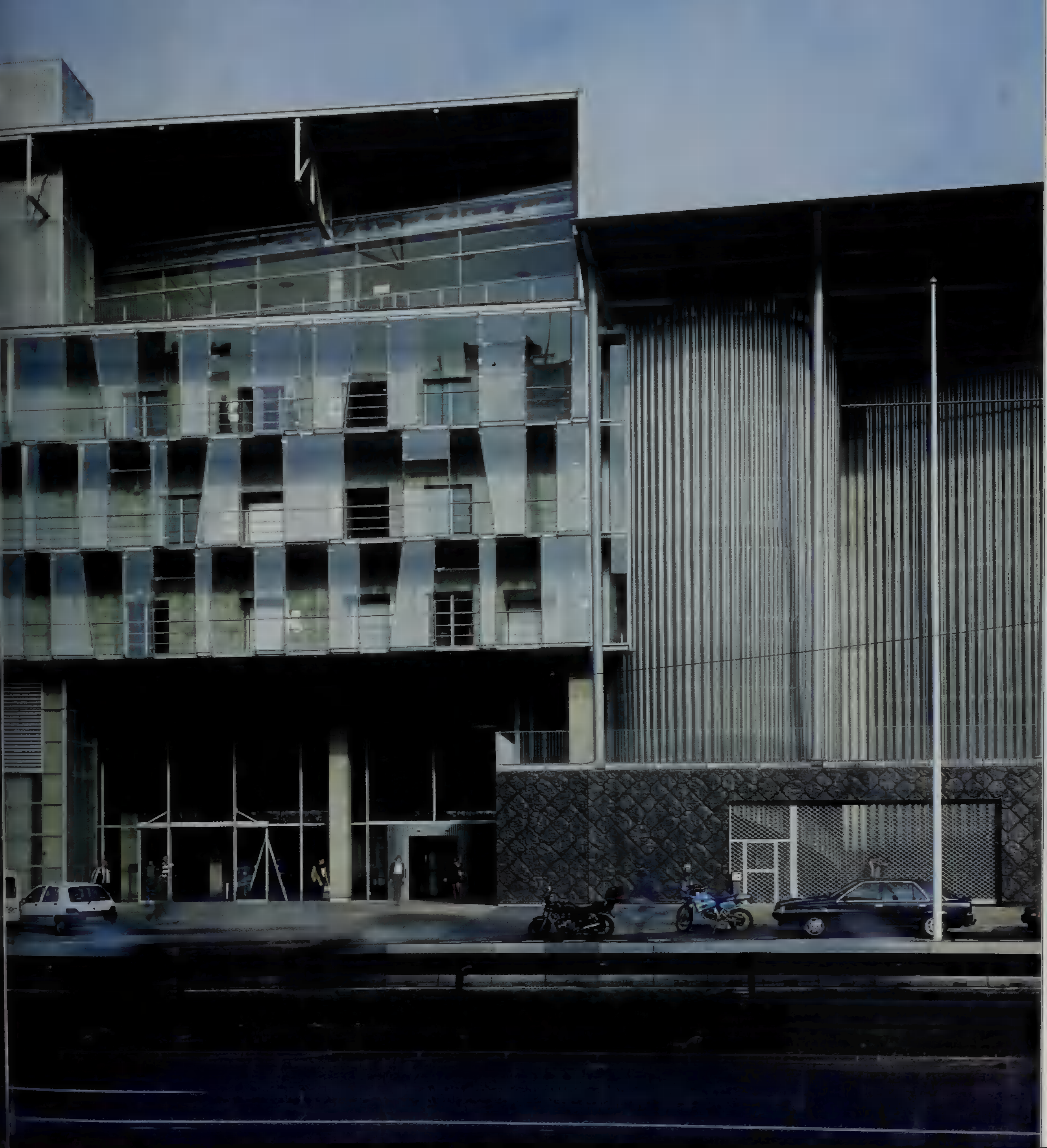


Euralille: Crossroads to 21st-Century Europe



Trains and rail stations are back! Rem Koolhaas's high-tech Lille Grand Palais is a multi-function center, and a destination for "Chunnel" users.

Lille Grand Palais
Lille, France
Office for Metropolitan Architecture
Rem Koolhaas, Architect
F.M. Delhay-Caille, Co-Architect



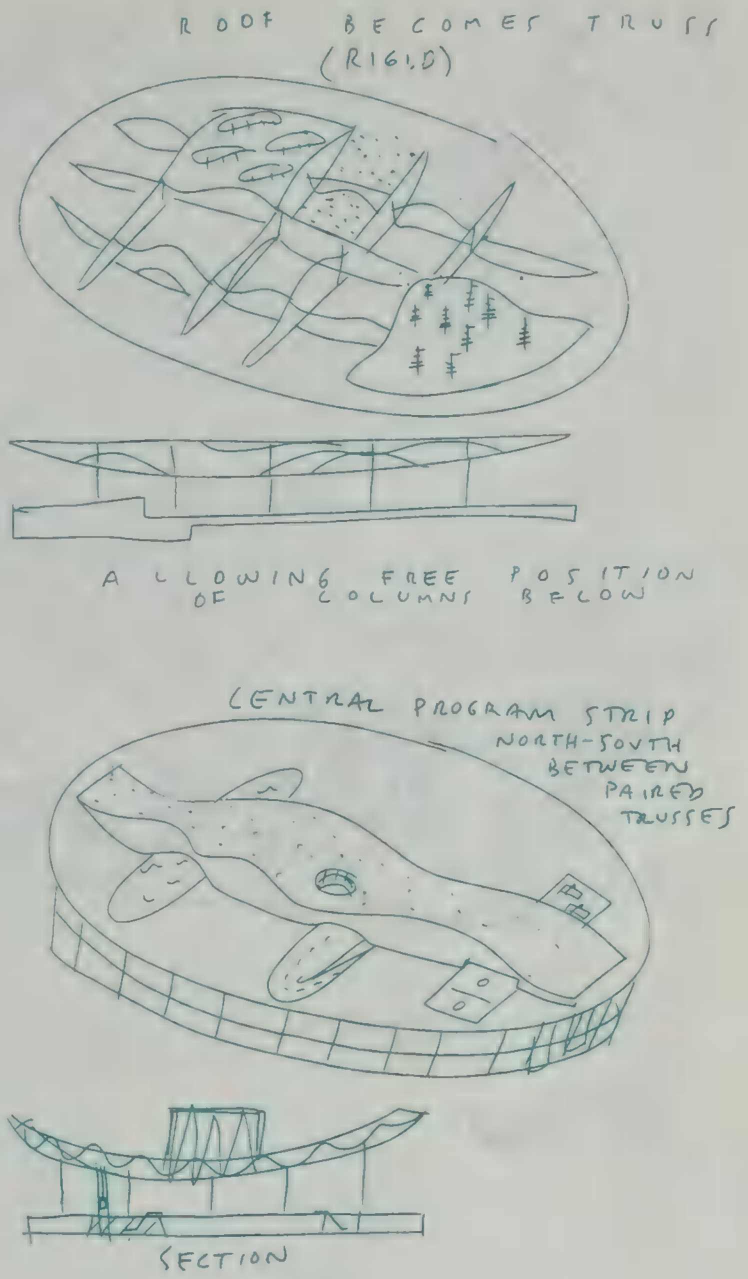
; most European cities move to shelter their historic centers, pushing he hypermarket, the congress center, and the rock concert venue out o suburban zones, Rem Koolhaas and his Rotterdam-based Office for Metropolitan Architecture (OMA), are bringing "big" architecture back into the city as a realistic and viable component of urban scale. Their testing ground is Euralille, a dense 173-acre transportation, iving, and working sub-center, adjacent to the old town of Lille in northern France. Koolhaas is both the master planner of Euralille, and architect of one of its key buildings, the Lille Grand Palais.

Euralille's main reason for being is its train station, intended to send freight and passengers throughout Europe and across the "Chunnel" o Great Britain. Situating the high-speed TGV train in Lille has made the city a crossroads of European interchange, at the center of he London/Brussels/ Paris triangle, containing more than 50-million nhabitants. By 1996, almost 100 TGV trains will stop at Euralille's new station daily. Inspired by so much coming and going, Koolhaas has often described the project as having a "soft" address—located not in terms of geography, but the distance in time away from other cities ("40 minutes from Paris"; "70 minutes from London"). Much of he reasoning behind Euralille is, therefore, based on temporary programs for large numbers of users. The connecting projects within the complex, including Clause Vasconi's World Trade Center, Christian Portzamparc's office tower, Jean Nouvel's commercial center and apartments become, in Koolhaas's words, "short circuits to the sensaion of movement."

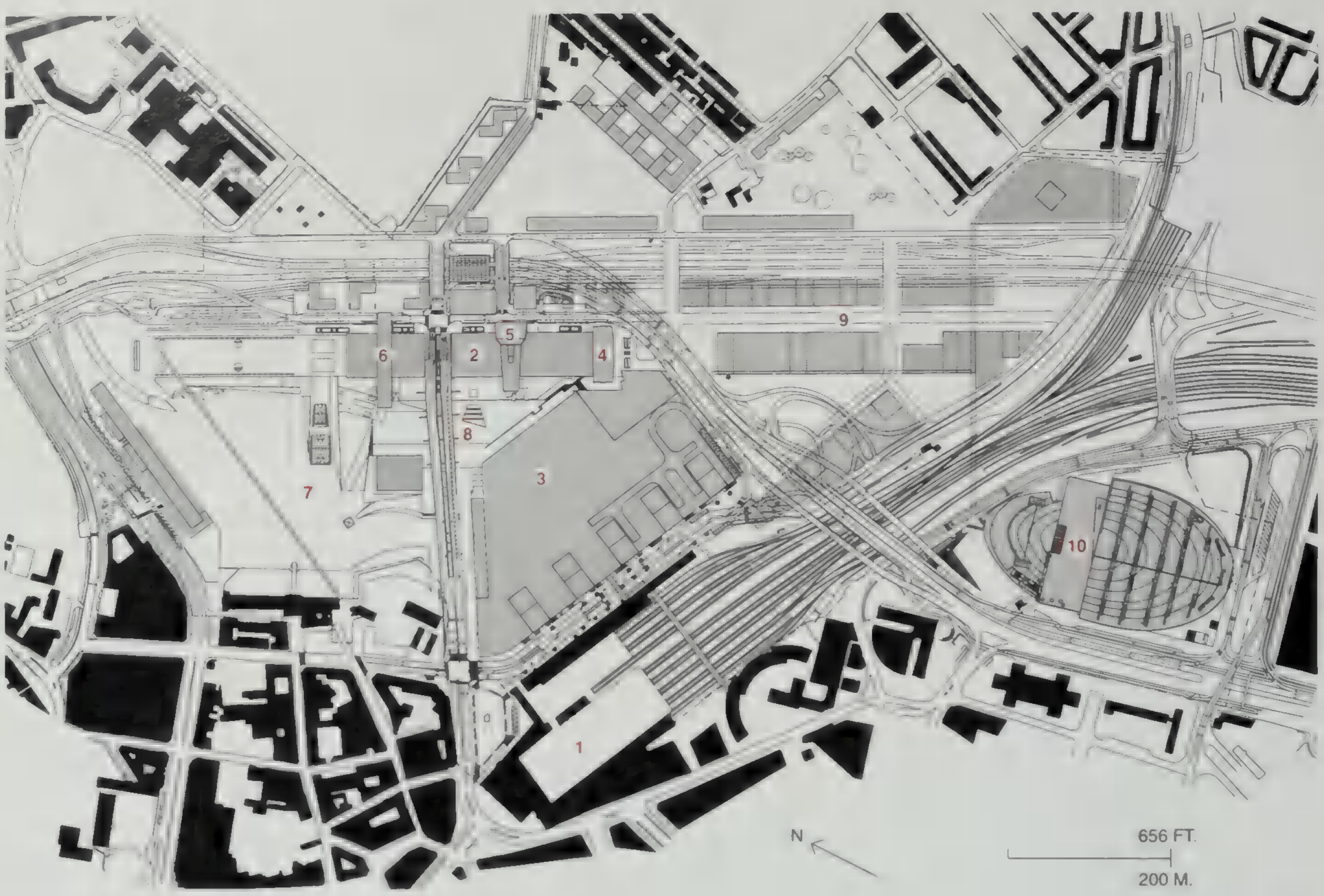
The Lille Grand Palais, which opened in June 1994, is a multi-function exposition hall, congress center, and concert hall, and can easily handle over 15,000 people per day. Set into a triangular site and cut off from the rest of Euralille by an existing road and train tracks, the ontext of the Grand Palais is defined by the transient links that exist n all cities: traffic, communications networks, and the influx of rowds. Bypassing any idea of local style, the facades are treated with epeated lines and textures in transparent to dark gray materials. The facade is both gritty and dynamic, following the unexpected lines of an egg-shaped plan. As Koolhaas has pointed out, with the size and omplexity of the over-lapping program so typical of Euralille, "the rchitect cannot pretend to fit them into a traditional urban typology." Yet, by basing his architecture on less tangible connections, the Lille Grand Palais could be located in almost any urban center.

The large programs of the Grand Palais are divided horizontally into hree parallel zones, with a semi-circular open shell at each end. The arger southern end houses a 211,250-square-foot exhibition space, nd the northern end, a 6,000-seat concert hall. It is in the central recangular wedge of the congress center where the clarity of the plan is verlaid with the complexity of the section. Here the public converges n the entrance lobby and the first-floor reception areas, spaces efined by concrete undersides of the three auditoria. Accented by he triangular-plan staircase and the structural columns, the dynamic pace defies the expectations of the building type.

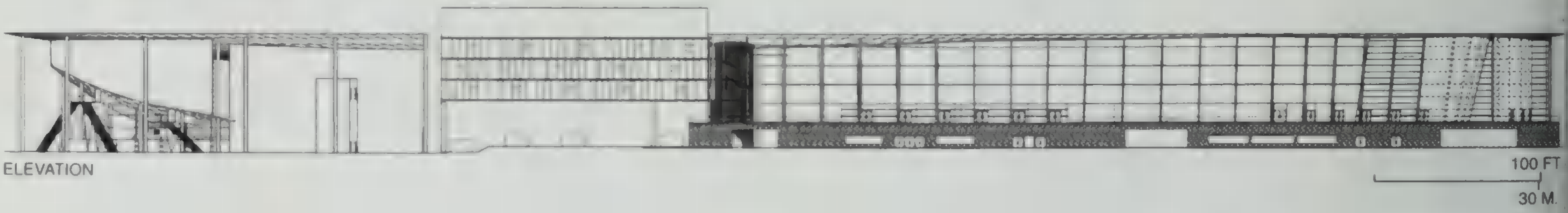
The exposition hall, along with its meeting rooms, offices, four bars, nd two restaurants, will serve the large trade fairs of this industrial ity. Divisible into three spaces, the hall is unified by the repeating hythm of the laminated wood panels suspended from the ceiling, and oftened by daylight filtering through the facade. Since the turn of ne century, daylight is an element rarely found in exposition halls, nd a design priority OMA had to fight for. It is Koolhaas's ability to verhaul a predictable building type that makes his version of largeeale architecture so infinitely interesting. *Claire Downey*


ROOF BECOMES TRUSS (RIGID)
ALLOWING FREE POSITION OF COLUMNS BELOW
CENTRAL PROGRAM STRIP NORTH-SOUTH BETWEEN PAIRED TRUSSES
SECTION

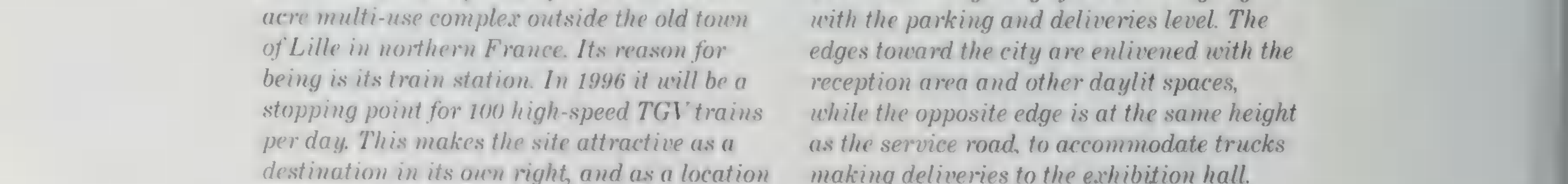
Sketches show how the integration of structure (top axonometric and section) and program (bottom axonometric) came together early in the design of the Lille Grand Palais.



1. *Existing station*
2. *TGV*
3. *Commercial center*
4. *World Trade Center tower*
5. *Crédit Lyonnais tower*
6. *Hotel*
7. *Urban park*
8. *Lowered station squar*
9. *Area reserved for Phase 2*
10. *Lille Grand Palais*



ELEVATION

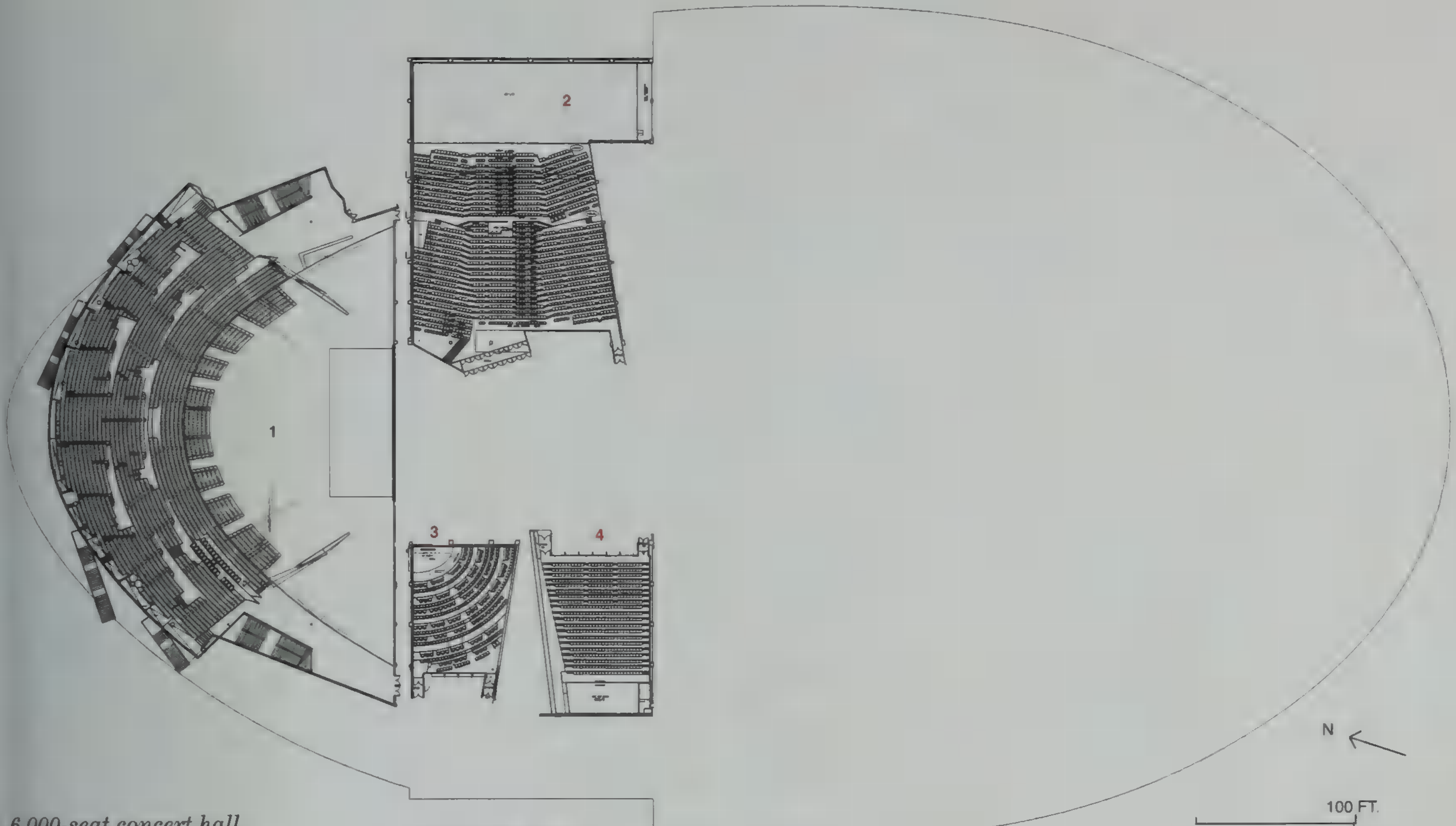


LONGITUDINAL SECTION

Euralille (see site plan, top) is a dense 173-acre multi-use complex outside the old town of Lille in northern France. Its reason for being is its train station. In 1996 it will be a stopping point for 100 high-speed TGV trains per day. This makes the site attractive as a destination in its own right, and as a location for an exposition center and concert hall. Each of the building's activities has its own zone, arranged so that the interfaces create new opportunities for contact. In the east-west direction, the zones are autonomous, while in the north-south direction, they are connected. The large amphitheater-like auditoria are placed back to back to form a bridge over the large public reception spaces below.

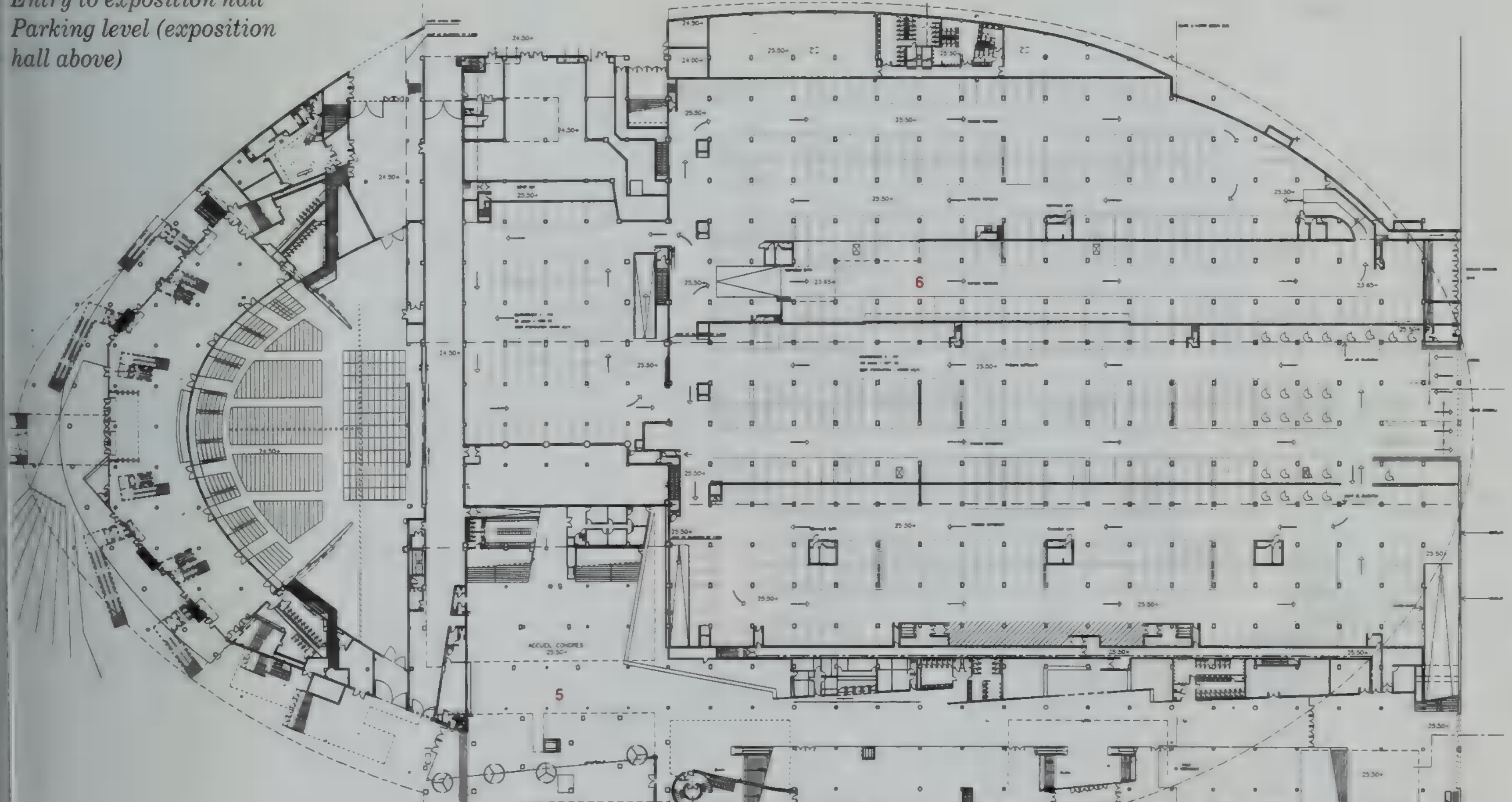
The vertical layering of the building begins with the parking and deliveries level. The edges toward the city are enlivened with the reception area and other daylit spaces, while the opposite edge is at the same height as the service road, to accommodate trucks making deliveries to the exhibition hall.

The facades that cover the middle layer of the building open onto the public spaces and are oriented toward the city. The top layer, the roof, has an almost perfectly oval form which is lower toward the center. The ceiling follows this form so that it is possible to imagine the shape of the building without ever viewing it as a whole.



AUDITORIUM LEVEL

6,000-seat concert hall
1,500-seat auditorium
500-seat auditorium
350-seat auditorium
Entry to exposition hall
Parking level (exposition hall above)



ENTRY AND PARKING LEVEL

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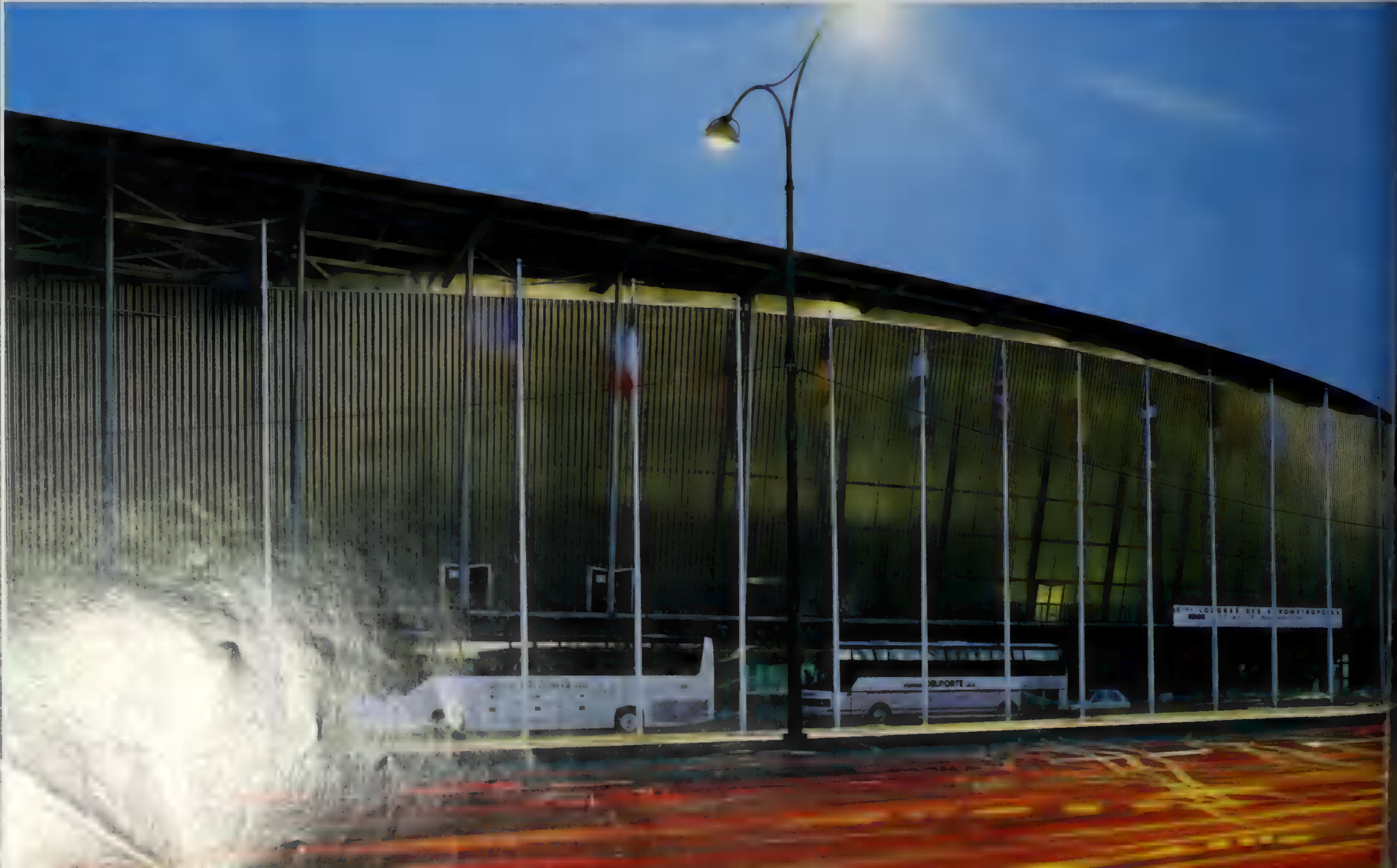

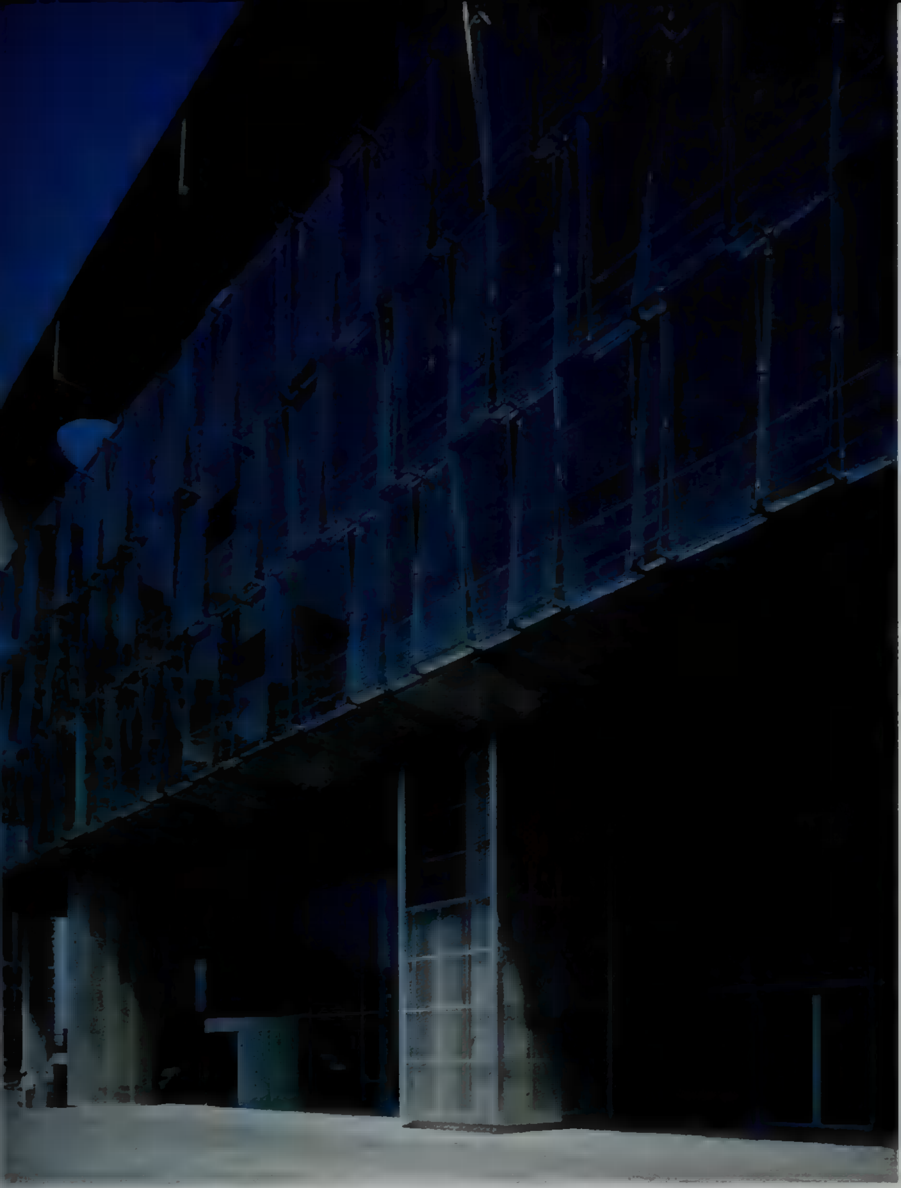

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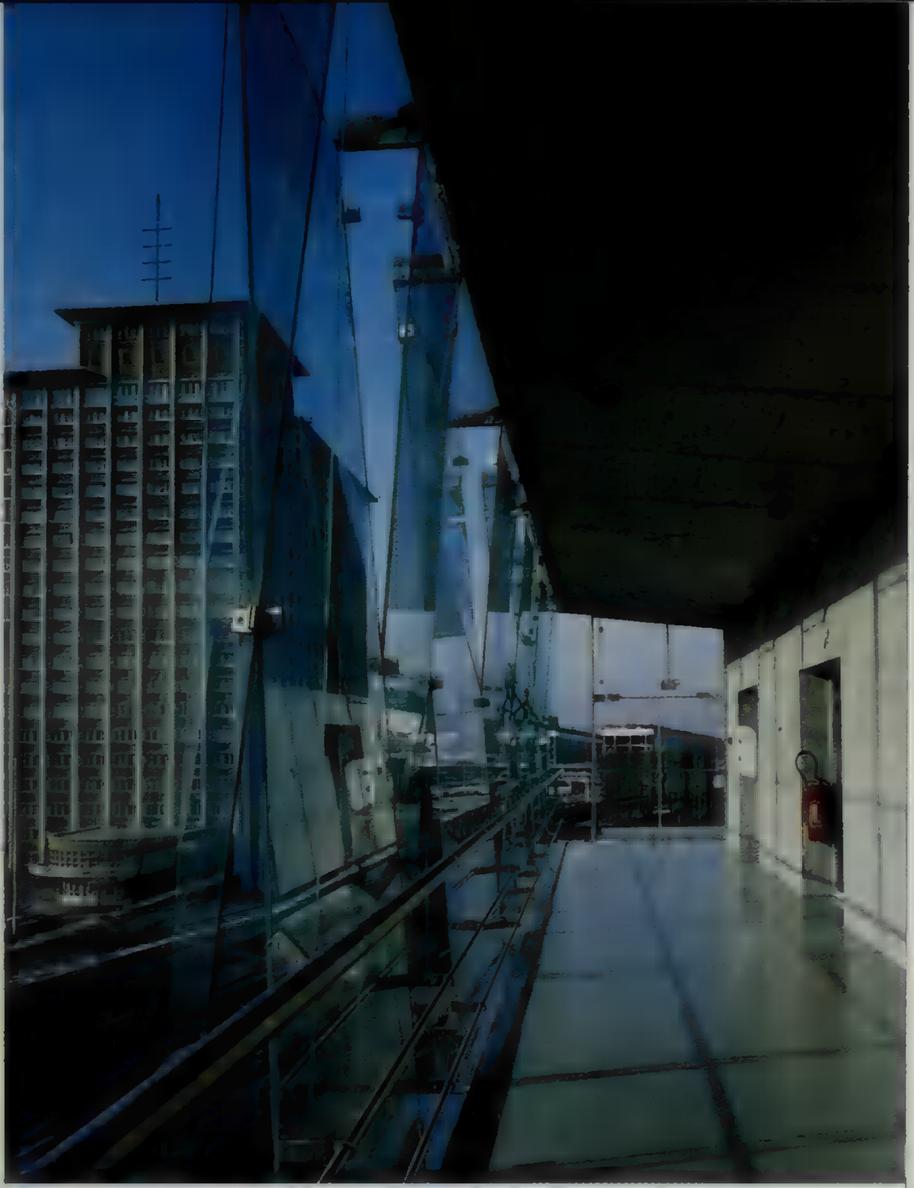

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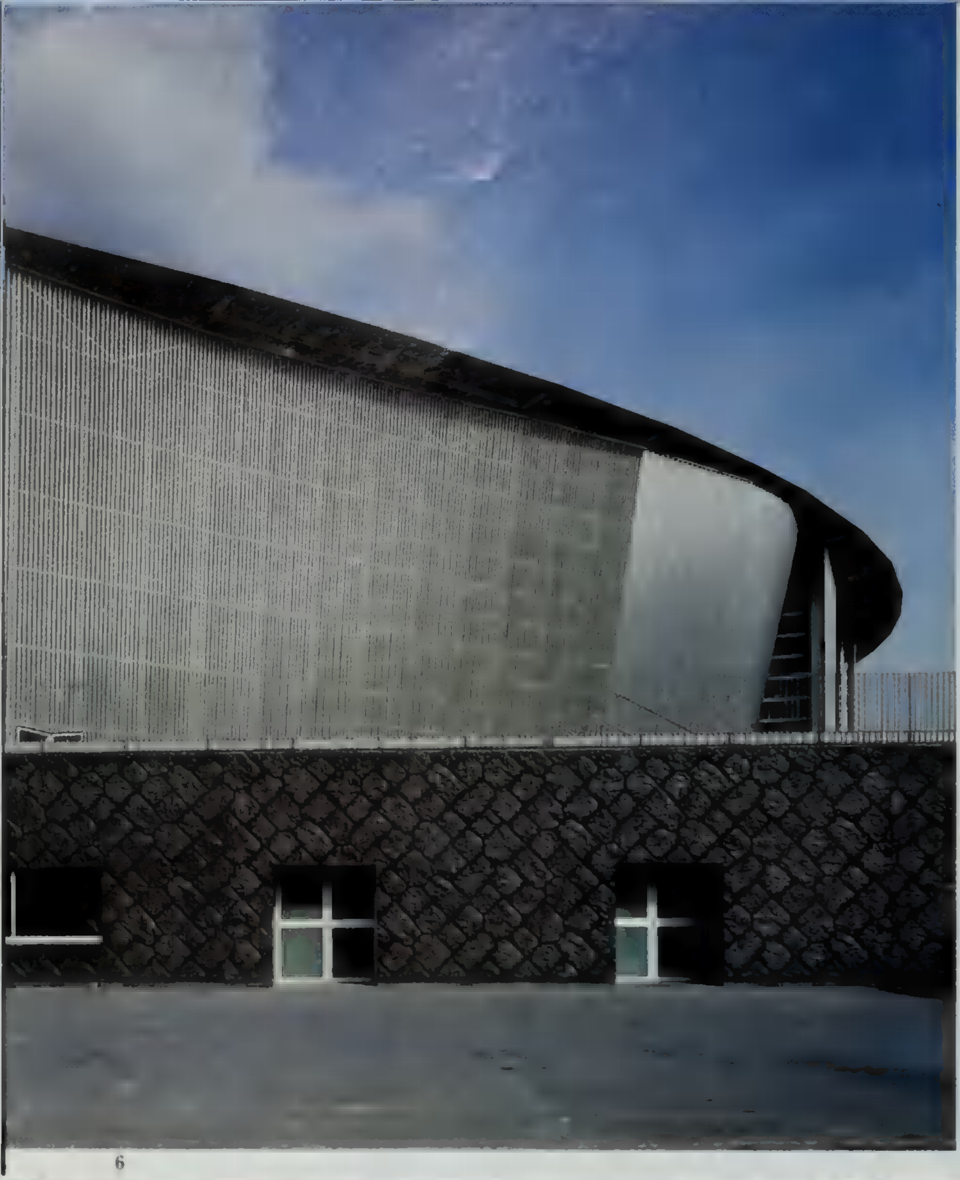

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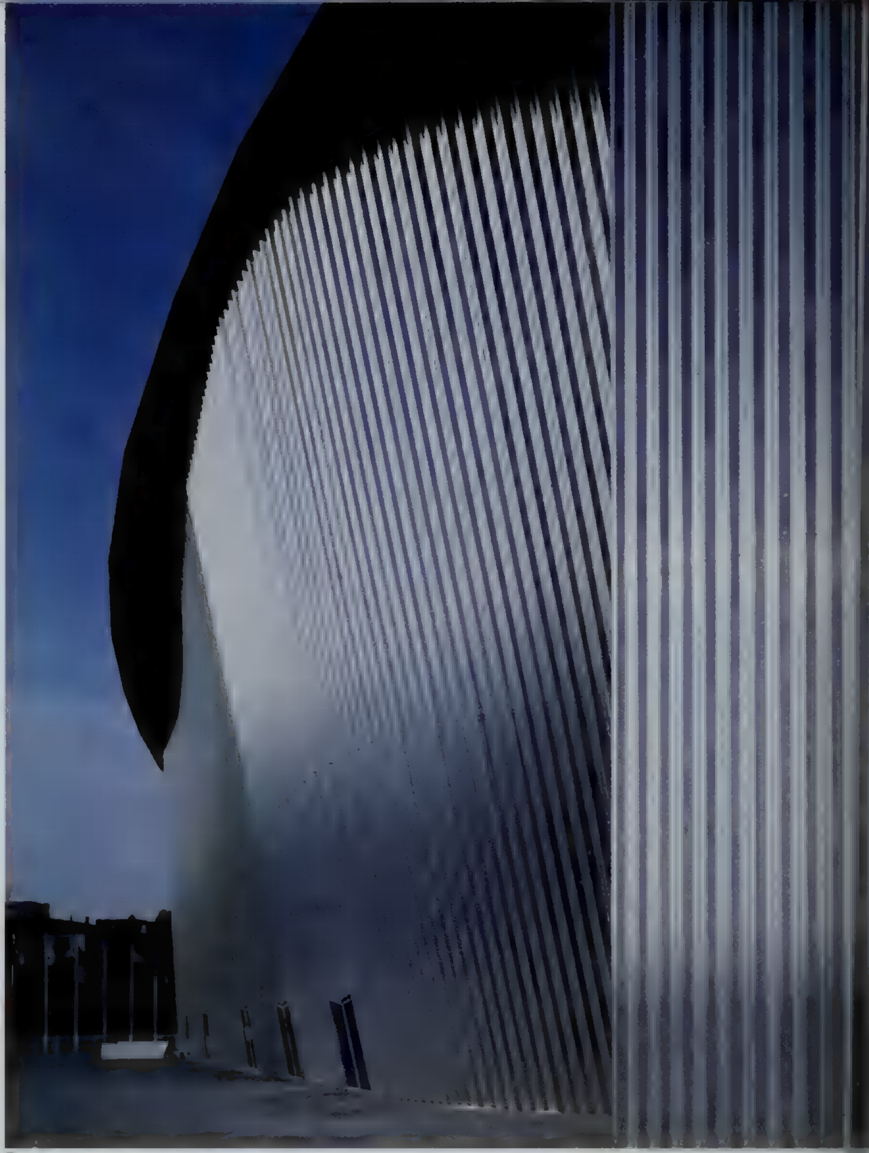

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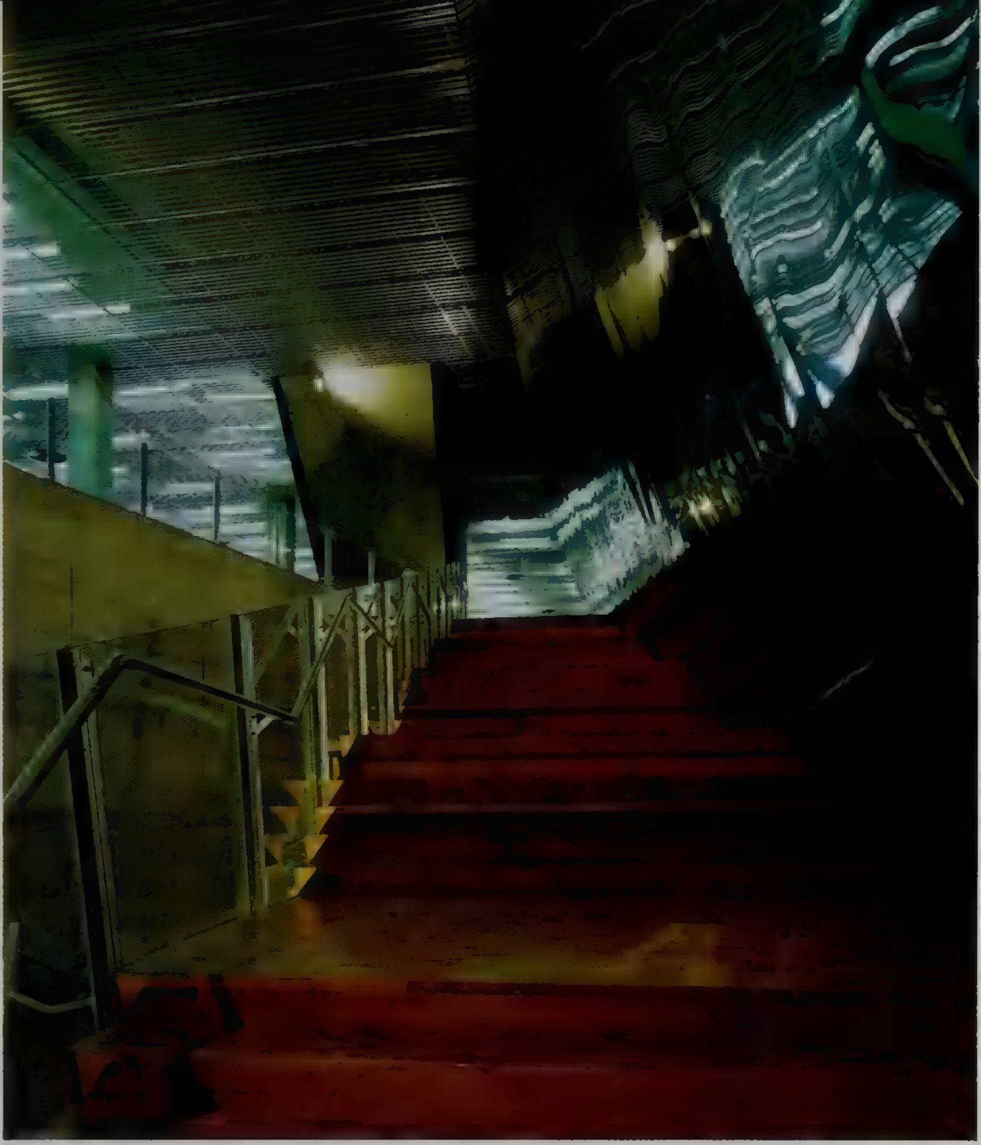
8

Up Close

Transparency (see photos on previous spread). Whether solid, transparent, or obscure, Koolhaas uses texture as well as opacity to differentiate the three large volumes of the Grand Palais. The alternating flat and angled glass shingles of the congress center facade (*1,3,4*), with their vertical glass supports, fill the interior lobbies and halls with direct sunlight. In contrast, a soft diffuse light enters through the exposition halls' corrugated facade panels of translucent fiberglass (*2*), encrusted with aluminum particles. Atop the congress center, the concrete envelope of the roof terrace is pierced by large circular openings to the sky (*5*). At night the facade surfaces unite, becoming an immense illuminated surface.

Structural Acrobatics. Koolhaas has devised the neat trick of creating surfaces that seem to float, while at the same time using structure as a major design element. The undulating surfaces of the exhibition hall (*6,7*) push out from the scored concrete building base, at some points almost escaping the thin edge of the roof. On the interior (*8*), the translucent skin is reinforced by steel members which change their angle of inclination to fit the curvature of the facade.

Fixed against the protruding wall of the 500-seat auditorium, the staircase (*9*) leading up to the congress center restaurant is mirrored in polished stainless-steel cladding. The skewed optical effect creates a slight sense of vertigo. Movement is the focus of the central lobby space (*10*), where the diagonal structural columns, escalators, and slanting columns make it difficult to find two parallel surfaces. The sea of round and square columns within the congress center lobby supports the auditoria above, but also acts as detail, along with the triangular stair, in the otherwise stark space.



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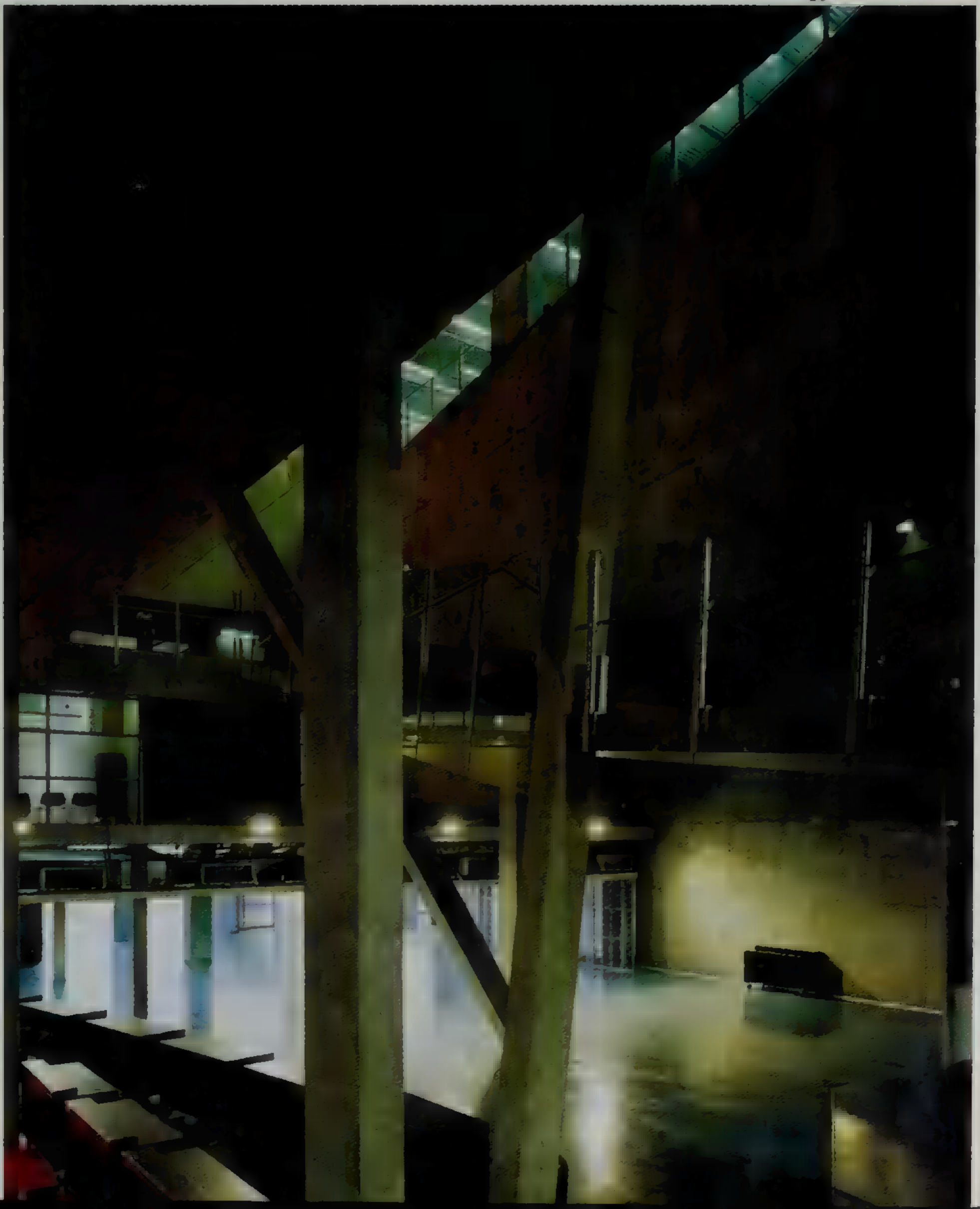

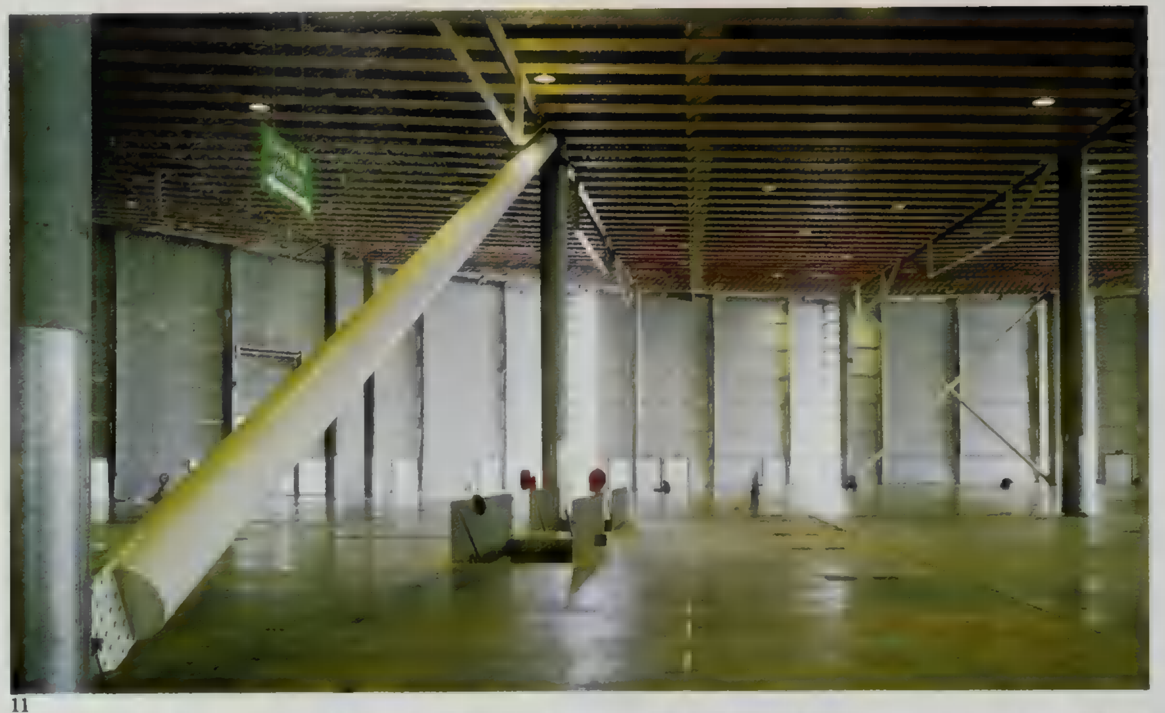

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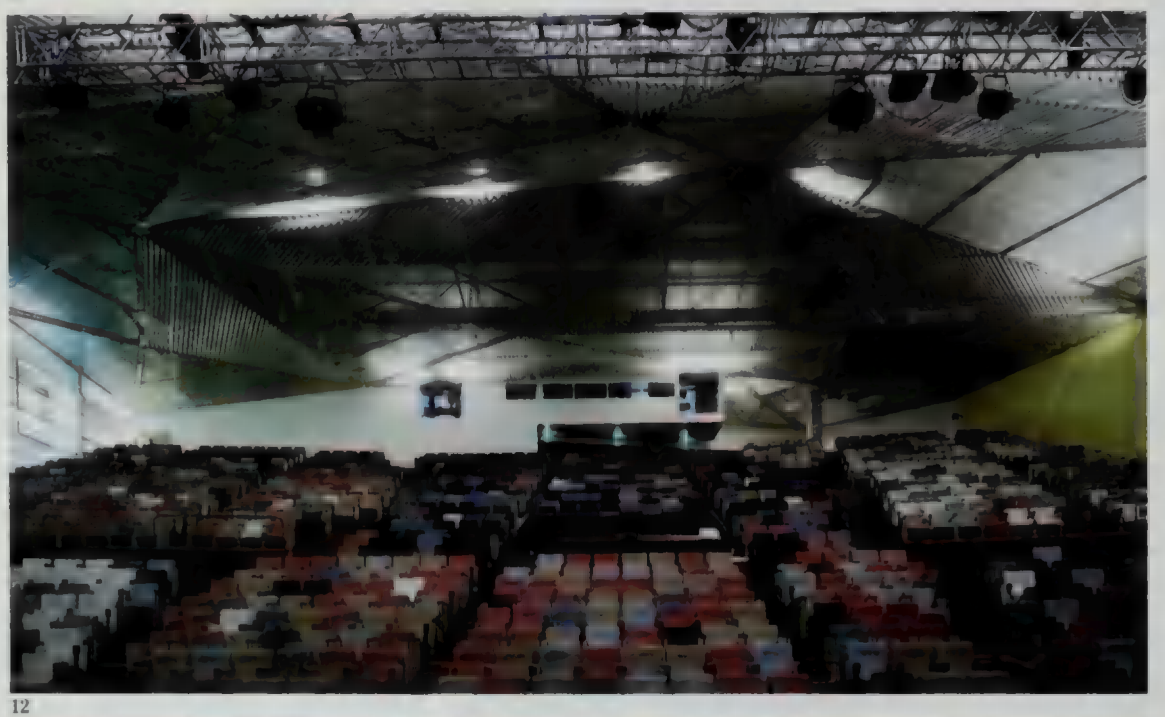

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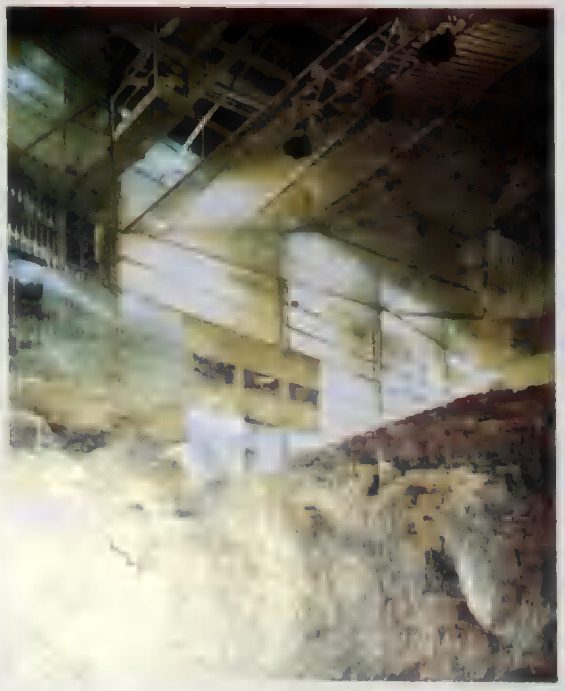
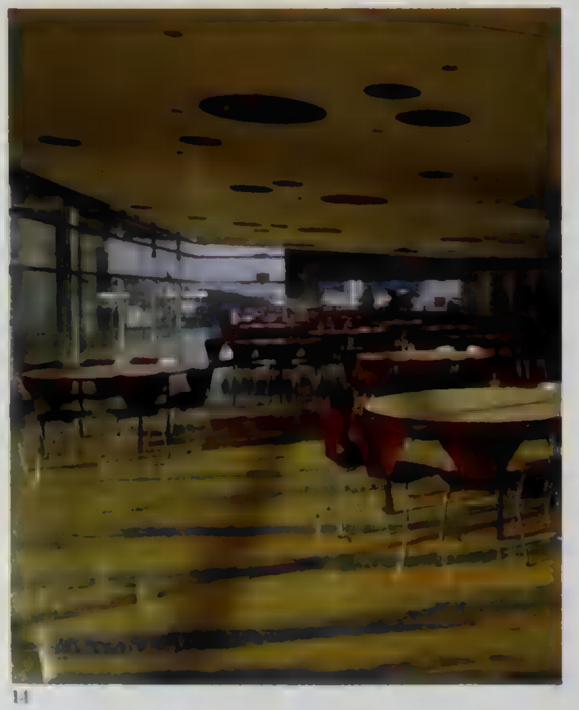




14

While the main lobby of the Grand Palais (10) is defined by the undersides of the auditoria and the outside walls of the main rooms, the interiors of these rooms are unique, self-contained designs. For the exposition hall (11), Koolhaas wanted a maximum of daylight, and a minimum of heavy ceiling structure. The galvanized-steel column bases house air-conditioning diffusers, since there is no ceiling ductwork.

Both the 1,500- and 500-seat auditoria are equipped with translator boxes, and seat-side audio hookups for nine-language translations. The faceted polycarbonate acoustical baffles of the large auditorium (12, 13, and opposite) recall the facade o the exposition hall. Very different treatments are found in the mid-sized auditorium with its orange seats and black leatherette padded walls, and th 350-seat hall finished in warm pine.

Credits
Lille Grand Palais
Lille, France
Architect: *Office for Metropolitan Architecture—Rem Koolhaas, Jan-Willem van Kullenburg, Douglas Grieco, Ray Maggiore, Rients Dijkstra, Ruud Cobussen, Edu Arroyo Munoz, Jim Njoo, Mark Schendel, Yushi Uehara, Sara Whiting, William Wilson, Ron Witte, Dirk Zulderveld, Diana Stiles, Luc Veeger*
Co-Architect: *F.M. Delhay-Caille—François Delhay, François Brevart, Christophe d'Hulst, Shoreh Davar, James Langlin, Isabelle le Métay, Olivier Tourraine, Xavier d'Alençon*
Interior Designer: *Petra Blasse and Julie Sfez*
Engineers: *Ove Arup & Partners—Cecil Balmond, Robert Pugh, Rory McGowan, (structural); Sodeg Ingenierie—Pascal Bakaert, Gerard Catutt Michel Desplanque, Bruno Fo tana, Joel Taquet (hvac); Rens van Luxemburg (acoustics)*

On the Waterfront

By Coleman Coker

Heading south out of Memphis—built on the southern most Chickasaw bluff, above the floodwaters of the mighty Mississippi—I travel down Highway 61. As the old single-lane highway cuts straight through the heart of the Delta making its way to New Orleans, I'm reminded of how this time-worn artery supplied life-blood to the rest of the world, serving as a path northward for many. To Memphis' Beale Street for a fortunate few—musicians, like B.B. King, Furry Lewis, Albert King—and on to Chicago, for others—Muddy Waters, Howlin' Wolf, John Lee Hooker. The impoverished, too, have found this an unavoidable but certain route, when generations ago—as mechanized farming deprived tenant farmers of their meager livelihood—land-dependent families migrated along this same road, only to arrive at low-skilled, low-paying factory jobs in northern cities.

Now, as I cross the city limits into Mississippi, it's late afternoon. The sky begins to turn the color of dry-slate as I descend into an expanse of pancake-flat farm land. Narrow at first, this terrain is bounded on the east by a distinct vertical edge, a geological separation, which meanders to the south, touching the river again at Vicksburg, and clearly marking the eastern limits of the rich alluvial soil that lies within this long, thin 200-mile strip. As repetitious rows of soybeans and cotton spread out before me—occasionally interrupted by a cypress tree-lined bayou—I recognize on my west flank another demarcation formed of long, straight, smooth lines of grassy geometry. These are the levees jutting above the farmland as they run parallel with the Mississippi. Tirelessly standing guard against periodic floods, the levees have made this black earth some of the most productive in the country; valued raw material for an enormous, multi-national agri-business that satiates the devouring appetite of "big" cultivation.

Rich soil, poor people

Yet with this kind of wealth, the Delta has remained a third-world community, one of the nation's poorest places, where jobs—outside of catfish farming—are few. Most who have remained live in unmitigated poverty. Abandoned, small-town main streets are lined with deteriorating brick shells. (They stand inevitably to remind us that there used to be commerce here.) Skeletal tenements are forsaken, their former occupants barely subsisting in slightly better shotgun shacks in destitute hamlets: Sugar Ditch, Itta Bena, Mound Bayou, and Alligator, the outskirts of Helena, Yazoo City. Yet, in this impoverishment, in this inimitable landscape, there remains a quiet affirmation: there is more here than meets the eye. As the land has persevered, it remains saturated with contradiction—proof that this area has served as a crucible for human endurance and social confrontation. As the [illegible] beats out its own distinct cadence, the Delta [illegible] particular visual rhythm, one in which each beat con- [illegible]. There is something substantial about these places, some [illegible], for lack of a better term, "real."

[illegible] principal of Mockbee/Coker Architects and [illegible] College of Art.

Mississippi mirage?

As I leave the sprawl of Memphis, the flatness of the land and the darkness spreading out before me, I come upon a new spectacle, something never seen here before. Competing with the enormity of the land, immense billboards, one after the other, begin to light my way through the early evening. Gigantic beauties, tantalizingly clad, tell me that they have the "certified loosest slots" in the Delta. Each boasts of its biggest winners with smallest bets. I'm told that *my* fistful of dollars is just down the road. Words like roulette, blackjack, craps, form a whole new language for this part of the world. Alluring announcements make the traveler aware that casinos have come to the Mississippi Delta. And in a big way.

As I proceed southward, I'm soon confronted with an anomaly. Veering off the main highway, I'm now on a new four-lane road filled with visitors to this, until recently, nearly uninhabited area. Mingling with the uncountable headlights, crisp lasers scan the sky, gyrating a heavenly advertisement. More gigantic signs full of neon and scintillating luminescence—in gold and silver, vermillion and ultramarine —persuade me that my fortune is certain to lie in Treasure Bay, Hollywood, Sam's Town, Fitzgerald's, or several of the other casinos competing for attention. Caught in the stream of automobiles I cross the levee and begin to make out the casinos. There they stand sculpted in synthetic stucco and bathed in an ephemeral haze: an ersatz Neo-classical mansion, its ruby-roofed facade full of well-proportioned columns and overscaled windows that open onto nothing; filled instead with two-dimensional, silhouetted forms in festive perio costume. A parking lot away is a vinyl-sided theatrical facade, a wild-west town. Its huge neon beacon boasts of lobster-and-steak dinners, only $5.95. Nearby, an emerald- and ochre-colored Irish castle stands surrounded by its own counterfeit moat. And there's a *faux bois* pirate's ship—on its bow a grinning mermaid, its main mast topped with a tattered Jolly Roger, all defended by a mock cannon that will never fire a broadside. There's also a stone and split-timbered Bavar

Fitzgerald's, Robinsonville, Mississippi

Architect Coleman Coker, of Memphis, and photographer Timothy Hursley, of Little Rock, take a drive along the Mississippi River to see the newest riverfront attractions.

n chalet, and a red-and-white striped circus big-top trimmed in con-ectionary color. All are new, their backs to the river's edge, where hifting sand bars and barges vie for navigable waters.

his northwest corner of Mississippi—whose traditional cash-crops ave been cotton, the Blues, and, more recently, pond-raised catfish—as undergone an overnight transformation. The first casino opened ver two years ago in Tunica. There are now 10 complexes here, with wo more under construction. Each has its own nightclubs and estaurants, while several boast their own hotels. Also, there are maller motels, travel parks, and quick-stop gas stations opening very week.

ll the big names have invested: Harrah's, Sheraton, Bally's, Circus ircus. Aside from those outside of Memphis, there are more: one in ula, across from Helena, two in Greenville, four in Vicksburg, one in atchez. These southernmost gaming houses address the context by rying to fit in: to avoid the *faux pas* of offending its historically-inded citizenry, one Vicksburg complex might pass as a Federal-tyle civic center, while the ante-bellum town of Natchez converted an uthentic river steamer. Between Tunica and New Orleans there are, t last count, 18 new casinos. Along the Gulf Coast there are 14.

asinos spread their wealth

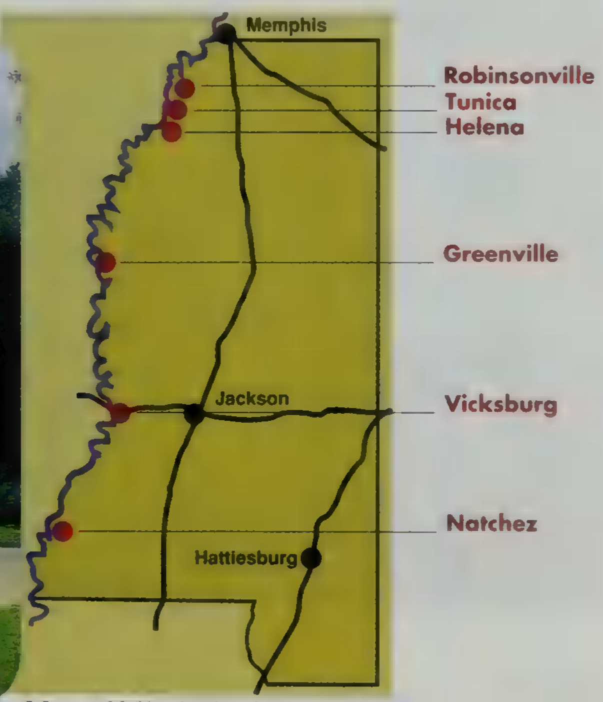
n a short time casinos proved to be more than beneficial to this eco-omically-barren state. Aside from all the new construction enerated by the casinos themselves, new schools, health-care facili-ies, highway construction and repairs are now under way, all paid for y taxes from the casino revenues. Architects benefit from this irectly, of course, and in the spin-off work as well. In a state long nown for its political and social conservatism, the legislature, having ear after year overseen the poorest state in the country, agreed fter much debate to permit gambling—as long as the gambling oors themselves didn't touch state soil. The new casinos complied, first building on barges actually in the river. More recently, though, they've become increasingly clever: shallow, plastic-lined moats filled with artificially colored blueish-green water that surround the buildings still comply with the letter, if not the intent, of the law.

Nothing in Commerce Landing, Mhoon Landing, and Casino Center appears done with permanence in mind. Rather, simulation disguised as commerce in turn disguised as entertainment is the order of the day. Everything subtle about the casinos' design focuses on the task of forgetting. Fantasy themes of the palatial south, treasure ships, the big top, and elegant riverboats offer a temporary suspension of reality: while here one may temporarily imagine oneself as a cunning riverboat gambler, wild West sheriff, or esteemed feudal lord. The casinos, isolated as they are from time and locale, exist in their own framework, one which seems detached and other-worldly. This sense of disconnectedness—the surreal quality that's sustained by the *trompe l'oeil* atmosphere—is further heightened by the contrast with the place where the casinos are built: the inexorable steadiness of the land and its deteriorating monuments, the immense poverty that remains here, and the inexhaustible power that the river still holds. This egregious difference is the deepest impression I leave with.

As I depart the glitz and shimmering artificiality, I'm reminded of something that Jean Baudrillard wrote some years ago when he stated that, for the first time, our western culture is no longer confronted with the age-old necessity of gathering goods and materials just in order to survive. Now, in our society of abundance—or over-abundance—where material goods abound, we're now faced with a different dilemma. We must figure out how to harvest this plenitude of material wealth that is all around, how to present and package it, so that it's appealing and seductive. The new casinos in Mississippi have effectively hit upon the opportune solution and, in doing so, have made pleasure the Delta's newest cash crop.

Timothy Hursley photos

Route 82



Map of Mississippi

"More gigantic signs full of neon and scintillating luminescence...persuade me that my fortune is certain to lie in Treasure Bay, Hollywood, Sam's Town, Fitzgerald's, or several of the other casinos competing for attention."

1

ecause it's close to Memphis, ennessee, Robinsonville, ocated in the extreme northvest corner of Mississippi, has ecome the new home of the reatest concentration of casinos uilt along the river. Before the rrival of these sprawling gamling complexes, this tiny ommunity consisted of not uch more than a handful of humble residences, an old grocery store, and a run-down cotton gin. Newly carved from the soybean and cotton fields, the glut of wealth that put down roots just west of Robinsonville has now turned the only road running through the small hamlet into a perpetual stream of bumper-to-bumper automobiles.

1., 2., 3. Circus Circus, Robinsonville, Mississippi
Hnedak Bobo Group, Architect

4. Treasure Bay, Robinsonville, Mississippi
Allen & Hoshell, Architect

5. Harrah's, Robinsonville, Mississippi

6. Sam's Town, Robinsonville, Mississippi
Askew Nixon Ferguson, Architect

3

6

"... the Delta has remained a third-world community, one of the nation's poorest places, where jobs—outside of catfish farming—are few."

The first casino, Splash (below), opened in the small Delta town of Tunica, Mississippi, previously known for high unemployment and destitute living conditions. As other casinos followed, Tunica began to reap financial and employment benefits. With the more recent opening of casinos in Robinsonville (previous pages), those in Tunica are faltering. The President casino even untethered itself from its moorings and

1

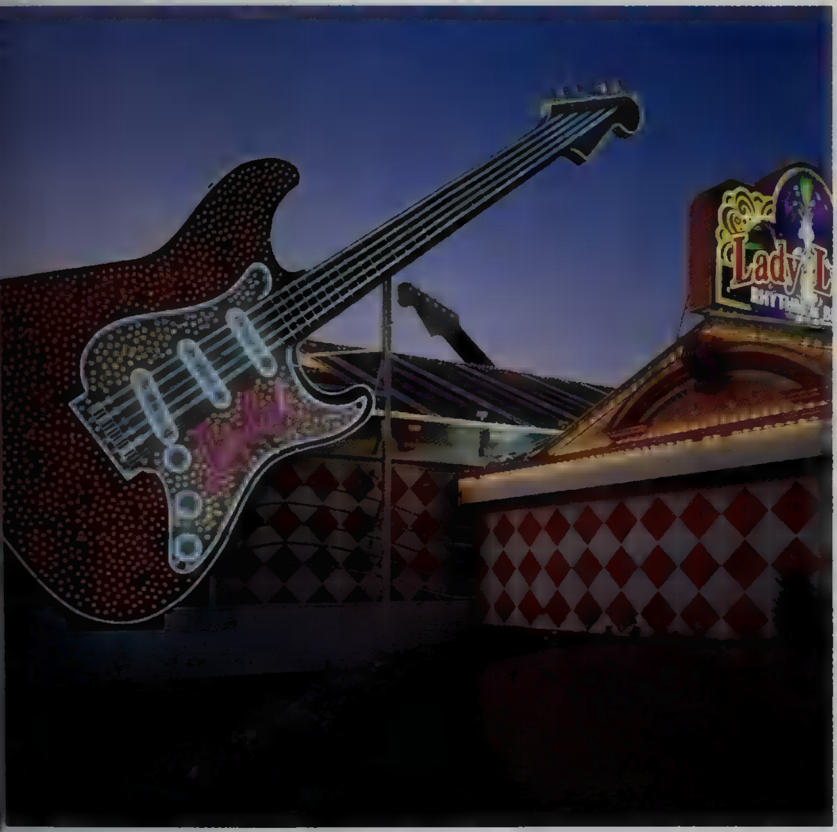
oated down river to the Gulf oast; Splash is considering oining the other casinos further orth in Robinsonville. That's ow Lady Luck (below left), in Ielena, Arkansas, found its ome. Located earlier in Robinonville, the casino didn't want ompetition, so it moved 20 miles outh and reopened, capitalizing n the Delta Blues tradition by onning gigantic neon guitars nd subtitling itself "Rhythm & Blues." Greenville, Mississippi, in the heart of the delta, has produced a wealth of writers, including Walker Percy and Shelby Foote. Hodding Carter and his family, long-time owners of the town's newspaper, won a Pulitzer Prize for their strong support of civil rights during an era of social intolerance. The two casinos here are on boats (below right) and are smaller than most of the complexes up and down river.

1. Splash, Tunica, Mississippi
O.T. Marshall Architects-Engineers, Architect2.,

5. Helena, Arkansas

3. Lady Luck Rhythm & Blues, Helena, Arkansas

4. Cotton Club, Greenville, Mississippi
Frank Hall & Associates, Architect



4

"...simulation disguised as commerce in turn disguised as entertainment is the order of the day."

1

3

he four casinos in Vicksburg, ississippi, take advantage of e town's proximity to the state apital of Jackson, located 45 inutes to the east. An old river wn located at the mouth of the azoo River, Vicksburg has been destination of Civil War afi- onados because of its National ark Battlefield. During the War, Grant's troops kept the town under siege for 47 days, pounding it day and night from iron-clad boats on the Mississippi River. Today, new barges on the river, clad in Victorian regalia, are again making their mark on the city.

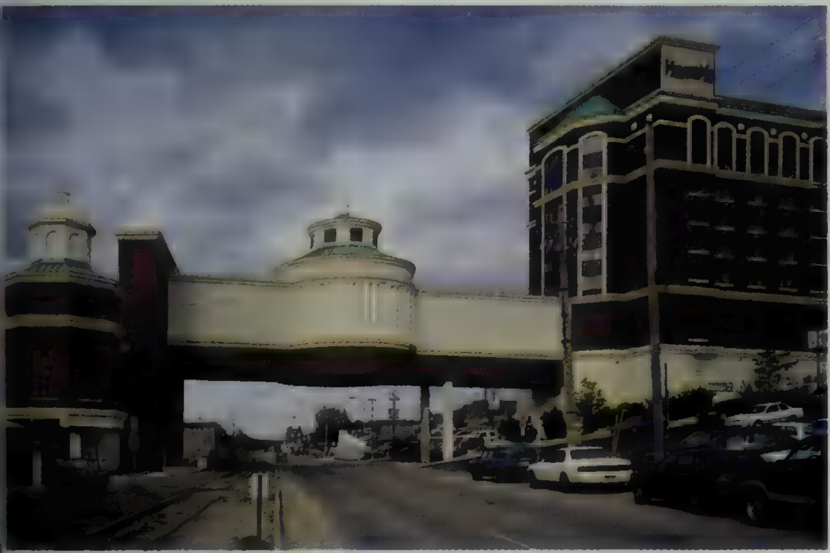
1. Ameristar, Vicksburg, Mississippi
Morris & Brown Architects, Architect
2. Lady Luck, Natchez, Mississippi.
Bill Preston (naval architect) and Charles Moroney (site improvement)

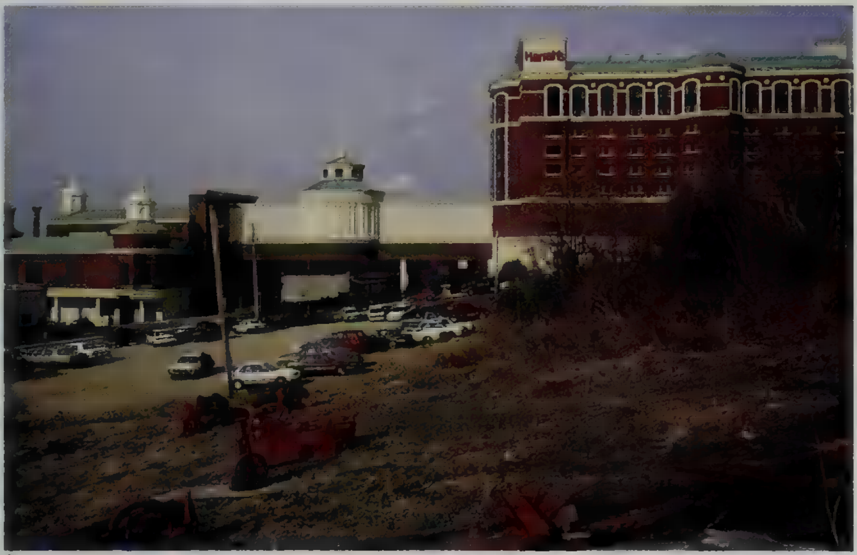
3., 4. Vicksburg, Mississippi

> *"These southernmost gaming houses address the context by trying to fit in: to avoid the faux pas of offending the historically minded citizenry..."*

t the bottom of the bluff, and ambling along the foot of the old own of Vicksburg, Harrah's orks hard to complement the uildings up the hill. Repetitive upolas mimic the courthouse to he east. Traditional red brick heathing, accented by a water- ble of cast stone meant to look ke granite, is topped by a ainted metal roof meant to esemble aged copper—today's materials trying to pass for yesterday's. In keeping with the gambling boat tradition—and, more importantly, to comply with the state's requirement that casinos don't actually touch state soil—the gaming floor is on a simulated paddle-wheeler connected to a hotel by a windowless pedestrian walk and ramps adorned in patriotic plastic swags.

1., 2., 3., 4. Harrah's, Vicksburg, Mississippi





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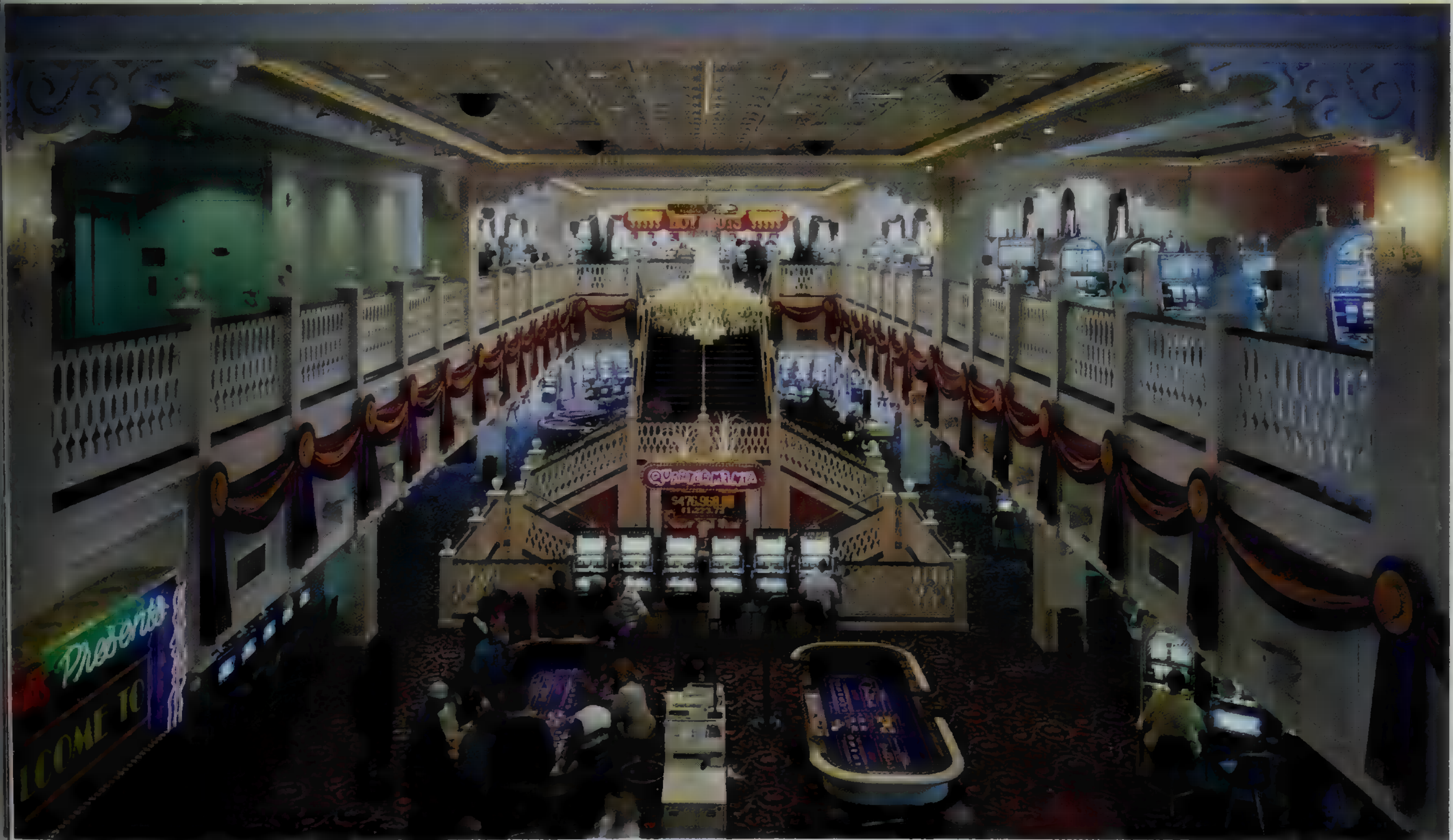


CALL FOR ENTRIES

RECORD INTERIORS 1995

The editors of ARCHITECTURAL RECORD announce the 26th annual RECORD INTERIORS awards program. This program is open to any registered architect; work previously published in other national design magazines is disqualified. Of particular interest are projects that incorporate innovative programs, building technologies, and use of materials. There is an entry fee of $15 per submission; please make checks payable to ARCHITECTURAL RECORD. Submissions must also include plan(s), photographs (transparencies, slides, or prints), and a brief project description bound firmly in an 8-1/2- by 11-in. folder—and be postmarked no later than April 30, 1995. Winning entries will be featured in the 1995 RECORD INTERIORS. Other submissions will either be returned or scheduled for a future issue. If you would like your entry returned, please include a self-addressed envelope with appropriate postage.

Submissions should be mailed to:
Karen D. Stein
RECORD INTERIORS
ARCHITECTURAL RECORD
1221 Avenue of the Americas
New York, New York 10020

etters *continued from page 4*

en Points of Praise

liked your Ten Point Forecast for '95 RECORD, January 1995, page 7]. With you ogging the business of architecture, things an't help getting better down the way.

homas A. Bullock
djunct Professor, Texas A&M University
ollege of Architecture
ollege Station, Texas

would like to know more about the New ork City procedure [allowing architects and ngineers to obtain building permits without lan review subject to certain conditions] eferred to in your editorial [RECORD, anuary 1995. page 7]. I would like to know ow the policy is working, how long imple- ented, and so forth. The idea could be esirable here in Florida if mandatory con- ract administration is employed.

ennett Shuman
rchitect
ensacola, Florida

ew York City's Building Commissioner is oel Miele. Source of the report was a story y Alan Oser of The New York Times, *pub- ished in that newspaper November 27, 1994. -Ed.*

Calendar *continued from page 4*

June 5-8

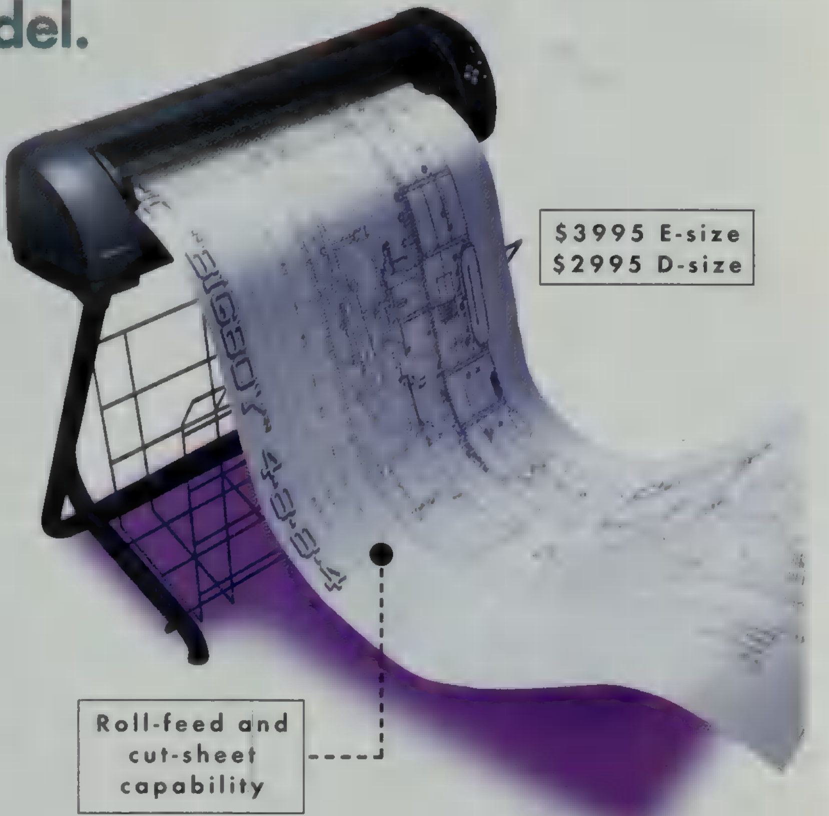
A/E/C Systems will hold its 1995 conference and exhibit at the Georgia World Conference Center, Atlanta. Call Sharon Price at 800/451-1196; 203/665-0153, or fax her at 203/666-4782.

Resuming in 1995

"Meet the Architect" tours of the Guggenheim Museum will be conducted by either Charles Gwathmey or Jacob Alspector of Gwathmey Siegel & Associates Architects. Price of $27.50 for non-members ($24 for members) includes admission and breakfast. Also, tours of Manhattan's SoHo cast-iron-buildings district will be conducted by an architectural historian, beginning in March. Price of $21 for non-members ($19 for members) includes breakfast and the tour. Call 212/423-3699 for information.

Competitions

- Entries for Southern Living magazine's Southern Home Awards competition for outstanding residential design in six categories are due May 31. Call 800/366-4712 for information.
- Portfolio submissions are due April 14 for the Burnham Prize competition sponsored by the Chicago Architectural Club. Eligible are architects under 40 who received their professional degrees after 1985 and are residents of one of eight Midwestern states. Call 708/940-9600 (ext 1295) for more information.
- The Young Architects Forum will hold a juried exhibit May 5 open to all architect interns. Registration is March 1; submissions are due April 1. Write Rodney Dionisio, 1215 Hightower Trail, Building B Suite 220, Atlanta Ga. 30350 for details.
- Entries for the College Housing Design Competition sponsored by EFCO Corp. and Drury College are due April 1. Licensed architects are asked to develop residential-housing designs for up to 300 students on an eight-acre site adjoining the Springfield, Mo., college. Cash prizes are $10,000, $5,000, $3,000, and $2,000. Call David Hutchens at 800/221-4169 for contest details.
- A $15,000 prize will be awarded by the Royal Oak Foundation to the winning entry that displays "a sympathetic collaboration among the three disciplines of architecture, interior design, and landscape architecture." Submissions must be received between April 1 and 15. Call 212/966-6565.
- Submission deadline is April 28 for design of the Minamata, Japan, memorial to victims of mercury contamination—the "Minamata Disease." Arata Isozaki will judge the entries. Call 81/966-63-1111. ■



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† [illegible] energy costs over the life of the lamp.

Circle 29 on inquiry c

On-line *continued from page 41*

buildings! With the list, I visited Web sites in five countries in half-an-hour at a cost of 38 cents. Some are listed on page 119.

•*Gopher, Archie, and FTP Sites:* Gopher, Archie, (yes, there's a Veronica, too) and anonymous FTP sites are named after the software used to access data. This software is freeware (available for download at no charge). Downloading through FTP is no more difficult than copying a file from one subdirectory to another.

What's on commercial BBSs

•*CompuServe (CIS)*: After surfing the "Net," this service feels like the fuddy-duddy mainframe computers it is built upon. However, it's much easier finding information on CIS than on the Internet since it is cataloged more carefully. CompuServe divides itself into hundreds of forums, each dedicated to a specific topic. It offers access to business and engineering databases, but few of these appear to offer much of interest to construction professionals. Architecture is discussed in section 11 of the LEAP forum. CompuServe is strongest in CAD-vendor activity; there's not much activity on other architectural subjects.

•*America OnLine (AOL):* Much like CompuServe, this BBS offers forums, a limited Internet connection, and e-mail. It has a more attractive and easier-to-use interface. It also has a single pricing structure. Since it started as a Macintosh-only service, it's stronger than CompuServe in Mac-oriented computer forums. It has much less activity in AutoCAD forums than Compuserve. Its PLACES forum appears to have the most active discussions of non-computer architectural issues. (It's much busier than AIAOnline.) Corbis, a Microsoft spinoff, offers downloadable digitized images of art and architecture, its limited collection focusing right now on famous buildings like St. Peter's Basilica in Rome (keyword: Corbis).

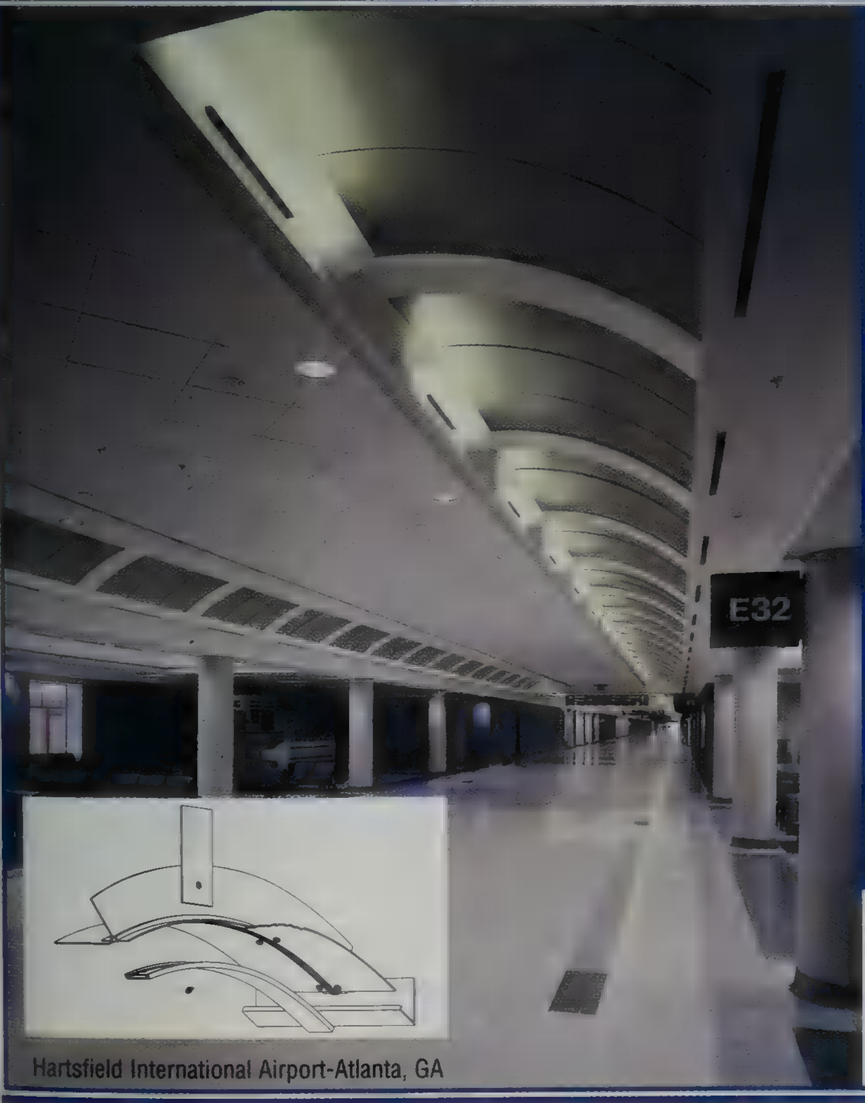
•*Other commercial BBSs:* Prodigy, Delphi, General Electric's GEnie, and Apple Computer's eWorld are smaller services, primarily oriented to consumers, and thus have little as yet focused on the specific interests of architects. Delphi has been known as the easiest gateway to the Internet, but Prodigy has just announced full (i.e., graphic) Internet access. CIS and AOL shouldn't be far behind. Which to choose? The short answer is, "It depends." You may have to try a couple of BBSs before you find one that meets your needs. Fortunately, most offer a free trial that lets you poke around without incurring the usual charges.

What's next?

With local service providers making Internet access dirt cheap, I foresee the demise of the private BBS. After all, what is the Internet but many private and public BBSs strung together worldwide using one rapidly-emerging standard—the Mosaic-style Web browser?

I wonder whether even the commercial BBSs can survive the decade. Most are scrambling to provide full Internet access. But consumers will soon learn that they can access the Internet without the commercial BBSs' $3- to $10-per-hour charges. Almost all of the software required for accessing the Internet is free, down to the software for creating your own Web home page. As the Web goes commercial, though, companies will devise various means to "price" information. Home pages may well become the ubiquitous means of information distribution in the late '90s, just as desktop publishing was in the '80s. ■

James S. Russell contributed to this article.



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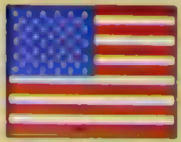

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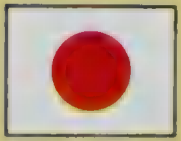

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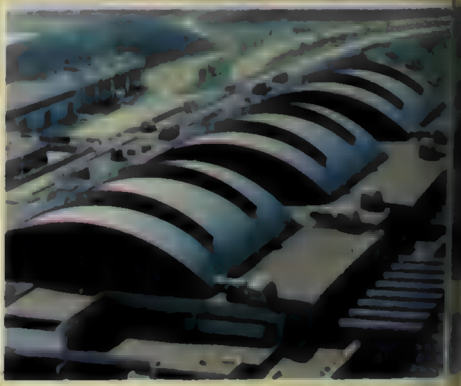

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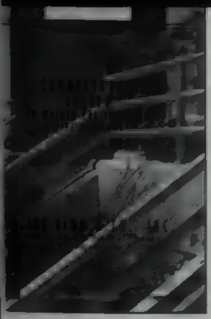
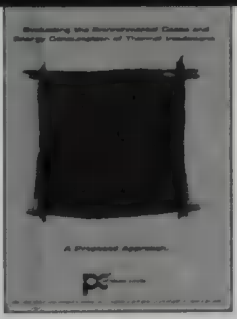
401. Conference furnishings
A laminate-surface line offers tables in virtually any size, shape, or configuration, as well as new wall-mounted marker- and video-presentation boards, fixed and mobile lecterns, and audio/video equipment cabinets. A 12-page catalog illustrates many of the base, finish, and edge-profile options available in the custom-order program. LUI Corp., Baltimore.

2. Firestop design guide
oduct-specific guidelines are ered to help in the selection and ecification of firestop systems, tching different Flamesafe caulks d safings with applicable building ditions. Lead- and asbestos-encap-ation products are also offered. ernational Protective Coatings rp., Oakhurst, N.J.

403. Architectural metals
Updated 1995 catalogs cover this maker's major product lines: standing-seam and flush-panel roofing; custom cladding panels in several metals; and column covers in round, square, oblong, and rectangular shapes. Custom fabrications and sizes are a specialty; color photos show recent installations. 800/426-7737. Copper Sales, Inc., Minneapolis.





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roduct Data on CAD disk

405. Green insulation
Brochure describes how thermal insulations determine a large share of a building's long-term environmental impact. Discusses the true, cradle-to-grave costs of construction materials, and deals broadly with the global problems caused by energy consumption and its toxic by-products. Pittsburgh Corning Corp., Pittsburgh. ▪

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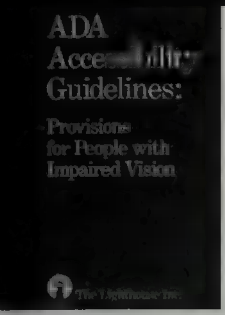
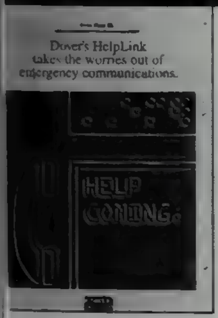


06. Design for impaired vision
38-page booklet, *ADA Accessibility uidelines: Provisions for People ith Impaired Vision*, discusses uilding elements that affect users ith some degree of visual impair-ient. Topics include detectable arnings, elevators, handrails, illumi-ation levels, and automated teller achines. 212/821-9200. The Light-ouse, Inc., New York City.

407. Pre-engineered structures
A color folder describes design and fabrication capabilities for steel buildings that require unusually long clear spans, heavier structural loads, and other special program criteria. Integration of metal roofs, walls, and framing components is said to provide faster construction times, lower costs, and energy efficiencies. Butler Mfg. Co., Kansas City, Mo.

08. Metal details on disk
new, seven-disk CAD version of MACNA's Architectural Sheet etal Manual includes 170 details, ch with descriptive text and plot-ig suggestions. For AutoCAD 12 OS or Windows) and other pro-ams. Discount price to architects: 00. 703/803-2989. Sheet Metal & r Conditioning Contractors Nation- Assn., Chantilly, Va. ▪

409. Architectural veneers
A source of fine exotic and domestic woods for paneling and cabinetry explains veneer terminology and usage. Defines figure types such as fiddleback and mottle, and illustrates the distinct appearance of different matching methods. Pocket-size folio illustrates wood species; flitch samples available. 708/547-6673. R.S. Bacon Veneer Co., Hillside, Ill.



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lplink is a new emergency commu-ations system described as a st-effective and hassle-free way to date existing elevators to ADA ndards. A color folder illustrates tures and options, including nage and finishes. A 24-hour moni-ing service is available. Fax quests: 601/342-4309. Dover Eleva- Systems, Memphis, Tenn.

411. Hinging hardware
A full-line architectural catalog illustrates mortise-, full-surface, five-knuckle, Roton, and other hinges for wood and hollow-metal doors, and includes door accessories such as pulls, push plates and bars, stops, and bolts. Gives size, finish, and mounting details for all products. 800/782-0149. Hager Hinge Co., St. Louis.

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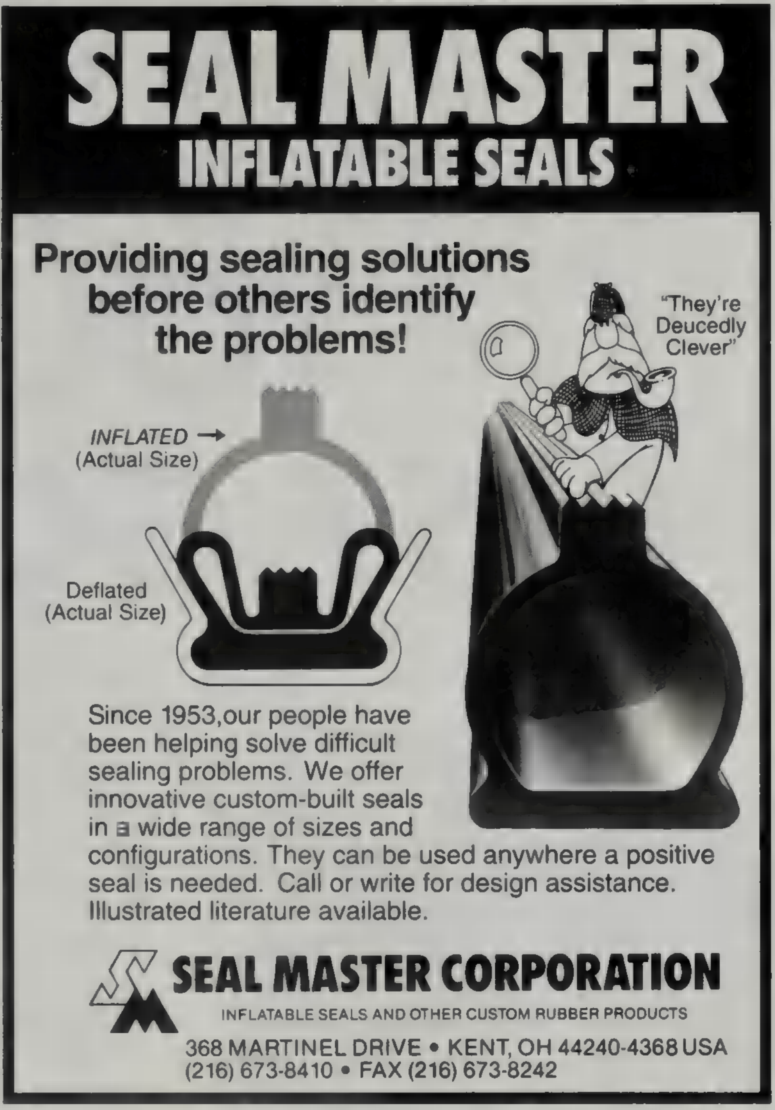
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.cu.nih/gov/nara_electronic. The Virtual
eference Desk at the University of Califor-
a, Irvine (cwis.uci.edu.) includes on-line versions of *Webster's Dictionary* and the *American English Dictionary*, and *Roget's Thesaurus*, as well as the USPS zip-code directory, telephone area codes, foreign-currency exchange rates, geographic names, and weather information. Gopher sites: Library of Congress: marvel.loc.gov; Occupational Safety and Health Administration: ginfo.cs.fit.edu; Disability information: valdor.cc.buffalo.edu; Environmental Protection Agency: gopher.epa.gov; EPA Futures Studies: futures.wic.epa.gov; National Science Foundation: stis.nsf.gov.

- *Commercial BBS sites:* On CompuServe, Autodesk is in forums ACAD, ADESK, ADESKBETA, and ASOFT. Bentley Systems: MSTATION; Foresight Resources is in PCVENA; IBM CAD/CAM in IBMENG. In the CADDVEND forum, find Archibus (section #15), Ashlar (#8), CadKey and DataCAD (#7), CADlink (#5), DesignCAD (#23), Digitarch (#13), Ditek (#20), ESRI (#9), Evolution Computing (#3), Flownet (#19), GDS (#14), Graphsoft (#11), IBM CAD (#10), Intusoft (#21), IsiCAD (#4), McNeel & Associates (#18), Numera Software (#16), Protel (#6), Sigma Design (#12), TommySoftware (#22), TurboCAD (#17). *R.G.*

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HDR Engineering, Inc., Omaha, NE

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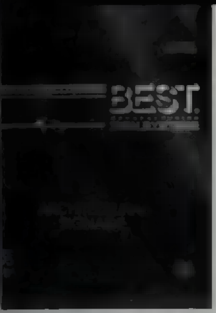
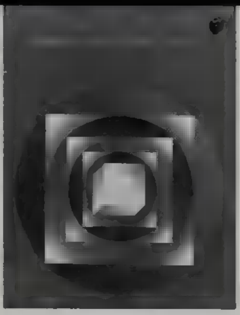
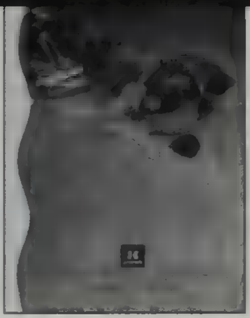


2. Architectural signage
terior and exterior signs for corpo-
e identity, wayfinding, ADA
mpliance, and other graphics pro-
ams are covered in a 24-page
alog. Explains how a proprietary
aphic Blast process creates raised
d engraved lettering on the same
n, in materials such as Corian,
tal, stone, and wood. 800/235-2378.
st Mfg. Co., Montrose, Colo.



413. Efficient materials storage
A colorful Storage Solution brochure explains how mobile, high-density storage for documents and materials—from football uniforms to magnetic media to artwork—frees up a floor plan, meets ADA access and safety mandates, improves file security, and facilitates access to stored items. Spacesaver Corp., Fort Atkinson, Wis. *

4. Accordion partitions
4-page 1995 design guide intro-
es an acoustically-rated accordion
ling door available in heights of up
0 ft. Product line includes see-
ough store enclosures and
od-slat or laminate room dividers
l folding doors for homes, schools,
l offices. Options include glazed
nts and ventilating inserts. Wood-
l-Marco Mfg., Forest Grove, Ore.



415. Laminated-cork flooring
A flyer explains the shock-absorbing, thermal, and acoustic features of Ipocork plank, real hardwood and cork veneers over a cushioning cork middle layer, finished with a clear vinyl wear layer. Suitable for residential areas, including kitchens, and for commercial and retail floors. 800/828-2675. Environmental Flooring Products, Lithonia, Ga.

6. Rubber flooring
v literature on all Pirelli commer-
and institutional floor products
strates colorful patterns, smooth
rble-looks, solids, and studded,
-slip floors for heavy-traffic areas.
terials offered in both tile and roll
nats, and FR and oil-resistant
npounds. All color and pattern
ions shown. PRF USA, Inc.,
neck, N.J.

417. Understanding anodizing
A 16-page guide gives architects a technical, working knowledge of anodizing, and what to expect when ordering these metal finishes. Text explains durability, color stability, low maintenance, and cost features, and compares batch and continuous-coil techniques. 708/526-2010. Aluminum Anodizers Council, Wauconda, Ill.

roduct Data on CAD disk
more information, circle item numbers on Reader Service Card.

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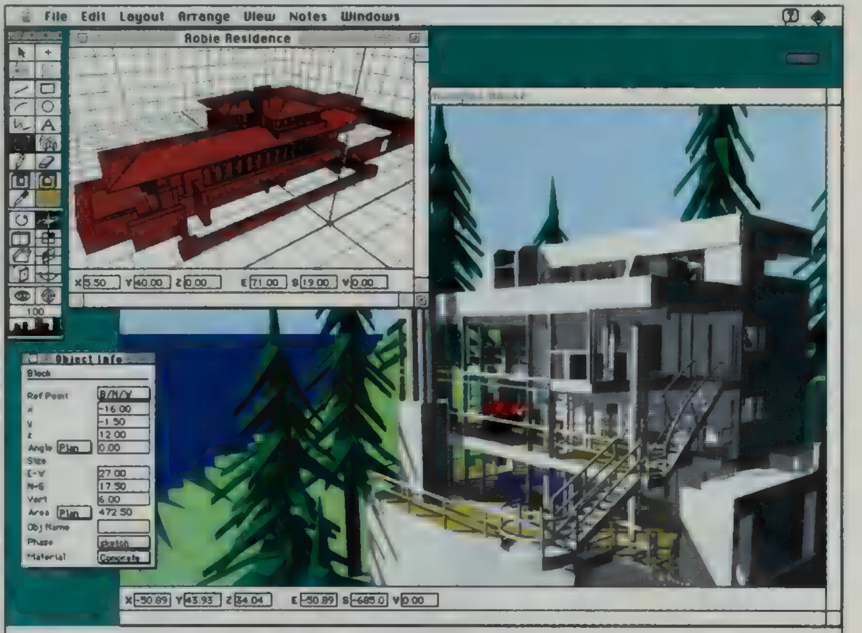

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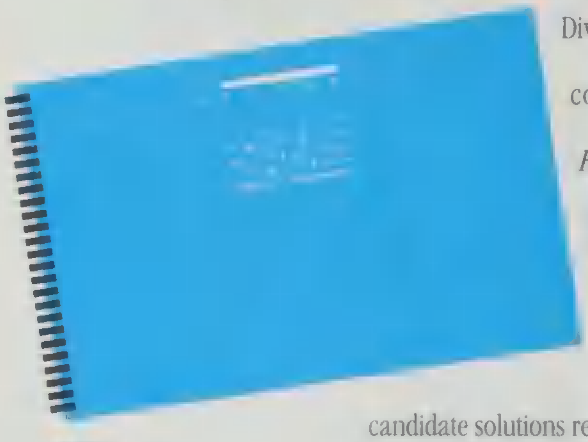
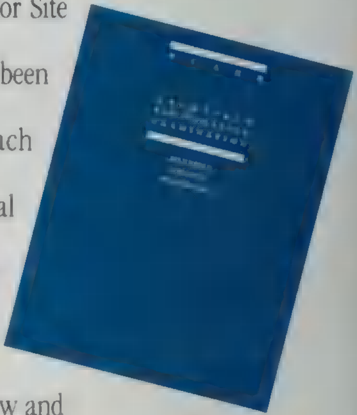


1995 A.R.E. Graphic Handbook
$55 plus shipping

Graphic In 1994, the format of Division C: Building Design changed to a multiple vignette format similar to that of Division B: Site Design Graphic. You'll want to get a head start with this book since it contains current information about the exam. The *1995 A.R.E. Graphic Handbook* contains sample vignettes from last June's exam for Site Design and Building Design. Vignettes for both divisions have been structured to give you one complete graphic exam for each division. Solve the sample vignettes and then look at actual candidate solutions red-lined by graders.

Written A separate handbook for the written divisions of the exam is now available. In a smaller 8 ½" X 11" format, this useful reference tool contains sample question types for all written divisions.



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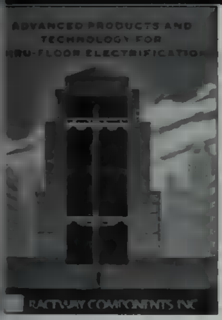
18. Asphalt roof shingles

color catalog gives appearance,
rformance, and installation infor-
ation on all GAF shingles for
sidential and light-commercial use.
dividual binder-mount pages with
tual shingle samples are available
r all product lines, including Tim-
rline, Royal Sovereign, and
ntinel. 908/271-8400. GAF Building
aterials, North Brunswick, N.J.

419. Slip-resist tile flooring

New Ironrock sample program covers three heavy-traffic "X-color" pavers, made with metallic additives throughout the body of the tile for enhanced slip resistance. Boards contrast textured X tiles with plain ones in the same colors. For use in commercial kitchens, airports, and malls. 216/484-4887. Metropolitan Ceramics, Canton, Ohio.

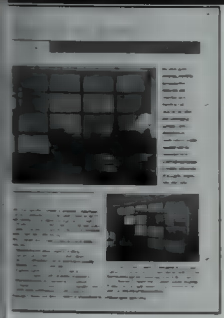


20. Power-distribution guide

n eight-page catalog matches four
or types—poke-through, raised
or, concrete deck, and cellular
ct—with the correct electrical fit-
gs. Photos show all products,
luding furniture feeds, access
xes, and service heads; many fit
sh against flooring "where they will
ver annoy you again". Raceway
mponents, Inc., Edison, N.J.

421. Steel door specification

Ceco's 1995 catalog covers standard-duty, heavy-duty, and extra-heavy-duty doors for offices, schools, hospitality, and healthcare use. Drawings show all basic configurations, glazing options, and ventilating louvers; a useful chart matches each door product with specific locations in each type of building. Ceco Door Products, Brentwood, Tenn.



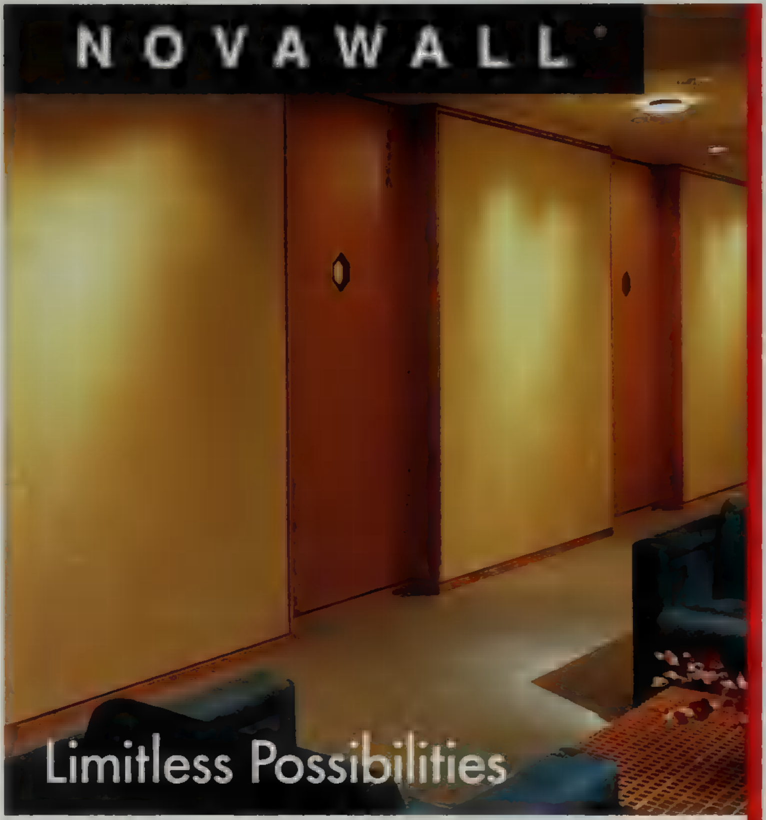
2. Movable wall systems

oduct-presentation sheets detail
features of two panelized metal-
ll styles: the new Forecast system,
scribed as cost-competitive with
ywall, and the European-look
erSign Wall, with a radius curve
windows, door frames, and
ners. Gives sound-transmission
d fire ratings; cites recent installa-
ns. The Mills Co., Cleveland.

423. Custom ventilation louvers

A 20-page specification guide illustrates very-large louvers fabricated to meet custom architectural and finish requirements, such as the round-top arch designed for the Genzyme Building, Boston. Louver types include acoustical, adjustable, drainable, thin-line, and storm-resistant styles. Industrial Louvers, Inc., Delano, Minn. ■

more information, circle item numbers on Reader Service Card.



Novawall stretched fabric wall and ceiling systems offer unique solutions to interior architecture problems. Hospitality, office and transportation projects benefit from the freedom to combine durability, visual impact and acoustical performance. A less expensive, more serviceable alternative to stone and millwork in high-traffic or vandalism-prone areas, Novawall is fully fire code compliant.

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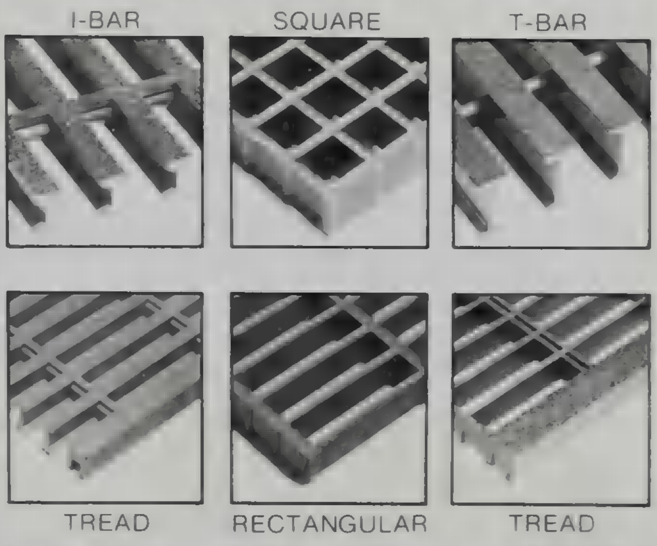
Fiberglass Gratings



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Metallo

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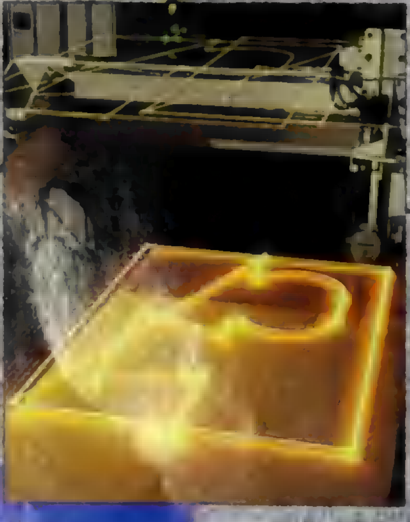
Decoustics unique CAD/CAM robotic cutting system works to very tight tolerances, and handles complex shapes [illegible] and accurately



Decoustics new metallic finish for acoustical wall and ceiling panels provides a high level of sound absorption which cannot be achieved with traditional metal. *Metallo* achieves its lustre throug the use of stainless steel particles which produce its metallic texture. *Metallo* enables the user to simulate a variety of metals such as copper, brass or gold.

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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.

Pages 84-85

The Louis Marx Jr. Hall, Center for Human Values, Princeton University
Kallmann McKinnell & Wood Architects, Inc., Architect
Brick veneer: Glen-Gery Corp. Built-up roofing: Tremco. Slate roofing shingles: Vermont Structural Slate. Fixed and operable windows: Custom Window Co. Glazing: PPG Industries, Glass Group. Oak and glass entrances: Somerset Door & Column Co. Stone flooring: Burlington Natstone Inc. Fire shutters: Cornell Iron Works. Cylindrical locksets: Best Lock Co. Exit devices: Von Duprin. Closers: Dorma. Elevators: ESCO.

Pages 86-87

The Nancy Lee and Perry R. Bass Center for Molecular & Structural Biology, Yale University
Kallmann McKinnell & Wood Architects, Inc.
Face brick: Glen-Gery Corp. (Alwine 250). Split-faced brownstone: Carl Schilling Stone Works. Cast stone: Sun Precast, Inc. Custom-color mortar: SGS. Extruded-aluminum curtain wall and infill glazing: Marmet Corp. EPDM sheet roofing: Carlisle SynTec Systems. Lead-coated copper roofing: Fabricated by Premier Roofing Co. Glazing: PPG Industries, Glass Group. Interior flush-wood and custom doors: Weyerhauser Co. Entrances: Acme Metal Products. Mortise locksets: Corbin-Russwin Architectural Hardware. EIFS materials: Sto Corp. (Toughwall); Dryvit Systems, Inc. Laboratory casework: Fisher Scientific. Fixtures: Chicago Faucet Co. Laboratory lighting: Visual Comfort Lighting. Seminar tables: BKM Woodworking Co., Inc. Hydraulic elevators: F. S. Payne Co. Handicap-access lift: Whittaker Co.

Pages 88-89

Hauser Hall, Harvard University Law School
Kallmann McKinnell & Wood Architects, Inc., Architect
Exterior brick: Summit Brick Co. Limestone: Carl Schilling Stoneworks, Inc. Granite: New England Stone Industries. Ballasted EPDM roofing: Carlisle SynTec System. Glazed curtain walls and aluminum-framed windows: Custom Window Co. Glazing: Rochester Insulated Glass. Stainless-steel rolling grille: Overhead Door Co. Wood entrances, interior doors, and paneling: Beabois (custom by architects). Mortise locksets: Corbin Russwin Architectural Hardware. Paints: Sherwin-Williams, Inc. Interior lighting: Litecontrol Corp.; American Glass Light. Elevators: Beckwith. ■

Corrections

- The Design News coverage of the Wakiki Convention Center [RECORD, January 1995, pg. 15] should have credited Wimberly Allison Tong & Goo as being the architect of record, in association with Loschky Marquardt & Nesholm.
- In the same issue, the photos of the Monte Cristo Hotel Renovation [page 35] should have been credited to Michael Ian Shopenn. ■

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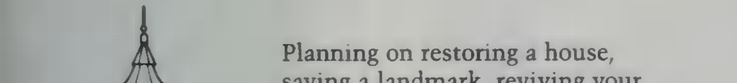

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Department PA
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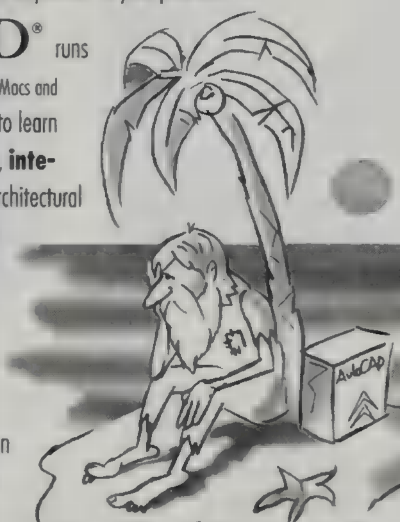

Manufacturers' Spotlight

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Atkinson Dynamics

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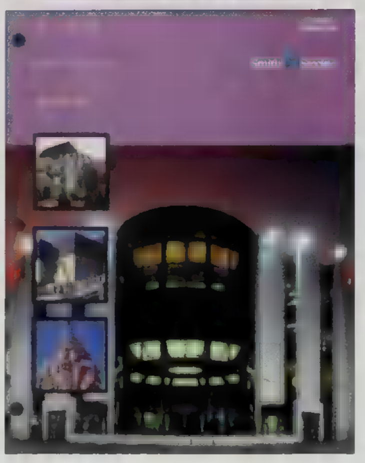
Metal Building Enclosure Products



36-page catalog describes Smith Steelite's metal enclosure systems for non-residential insulated and non-insulated walls, roofs, composite walls, profiled panels, curved panels, structural standing seam roof, windows, vents and louvers. Also systems for explosion release, sound absorption, firewalls, asbestos panel replacement. Includes product features, application photos, specifications, color selector guide, protective coatings specifications.

Smith Steelite

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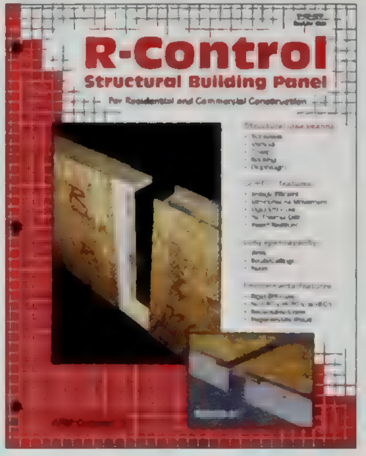
R-Control® Structural Building Panels


R-Control
Structural Building Panel
For Residential and Commercial Construction

R-Control® Structural Building Panels provide superior insulation for walls and roofs in residential and commercial applications. EPS insulation is adhesively welded between stranded lumber facings, creating a panel that won't warp. R-Control has passed structural and fire tests as prescribed by national building code authorities. AFM's EPS contains no CFC's, HCFC's, or HFC's. R-Control; Panels are manufactured across the nation.

AFM Corp.

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Applied Design by Stuart Dean

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Stuart Dean

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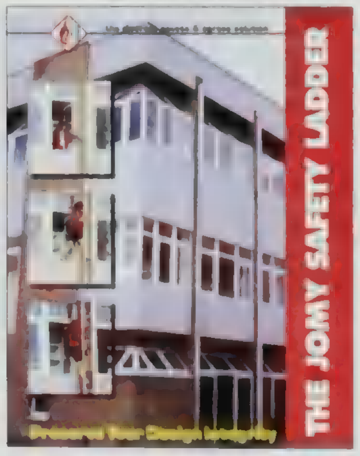
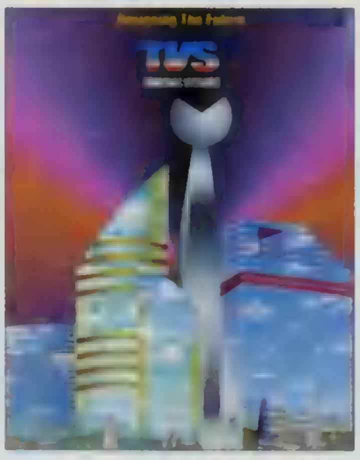
The Discrete Access & Egress Solution



Security requirements, space constraints and aesthetic considerations are a few of the problem-solving applications for the JOMY Safety Ladder. The ladder's discrete appearance makes it an ideal solution for access and egress requirements. The ladder looks like a drainpipe when closed but opens to a [illegible] ty Ladder with [illegible] Safety [illegible] Ladder [illegible] 201 [illegible] Phone

[illegible] adder

Automated Vacuum Transport Systems



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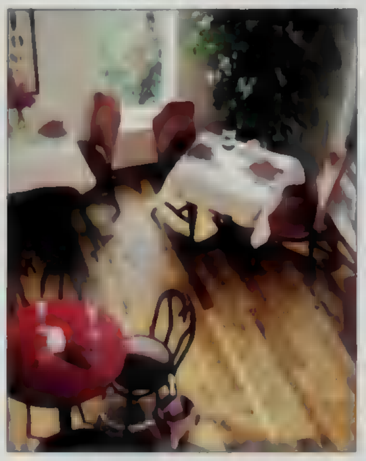

Our planks are naturally Distressed by Mother Nature, Aged by Father Time™ and can be used for flooring, panelling or millwork. From old barnwood emerges a pricision-milled plank that retains the patina and character imparted by decades of wind, rain and sun, and the signs of old-time craftsman. Free brochure.

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Design Materials, Inc.

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Access Industries, Inc.

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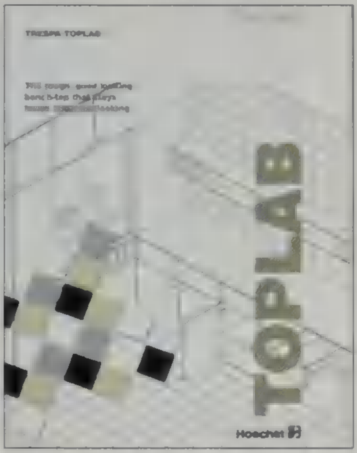
Trespa® Toplab® Lab Panel

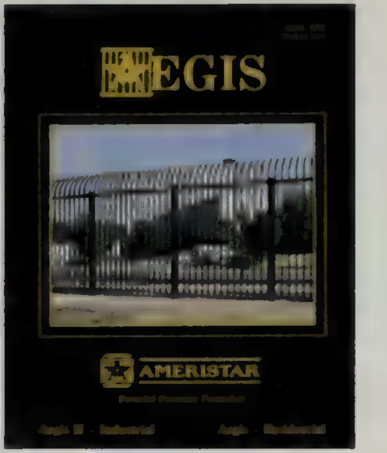


Trespa® Toplab® grade resists strong acids, e.g. 96% Sulfuric, and other chemicals. Toplab is durable, easy-to-clean, and available in colors. It will not rot, rust, delaminate, or support bacteria. Toplab is available in sizes up to 1" thick and 12' in length; it remains flat for excellent butt joints and is 25% lighter than epoxy. 1-800-4-TRESPA.

Hoechst Celanese Corp.

Circle 54 on Inquiry card

AEGIS™

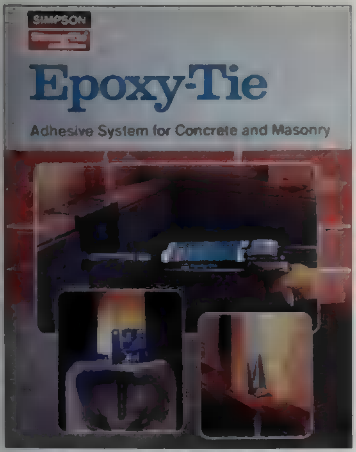


Aegis ornamental fence systems feature strong Forerunner™ rails, internal retaining rods, & specially designed panel brackets. Aegis II industrial ornamental fence offers the strongest security ornamental fence available in todays market. Aegis holds the distinction of having its fence systems specified by more architects & builders than any other in the market. Both industrial & residential brochures are available upon request & include data on structure, design, & options available. Panel design is a component system for easy shipping. For additional information & a free 8-page brochure , call (800) 321-8724 P.O. Box 581000, Tulsa, OK 74158-1000 Fax# (918) 835-0899

AMERISTAR®

Circle 55 on Inquiry card

Anchoring bolts easier with EPOXY-TIE ™

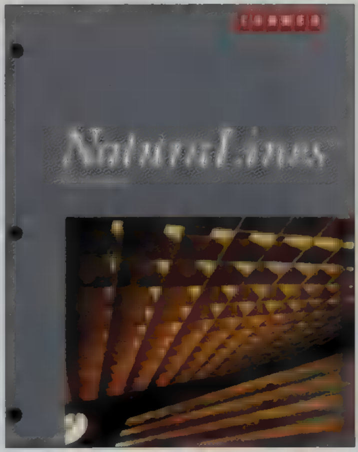


Low-cost epoxy system for retrofits in concrete or masonry provides stronger anchoring than can be achieved with mechanical anchors. Epoxy-Tie™ bonds with surrounding concrete; anchor is less prone to side-burst during close-interval installation. Higher resistance to moisture and vibration than mechanical anchors. Full information in brochure **F-ET.**

Simpson Strong-Tie® Co., Inc.

Circle 56 on Inquiry card

Conwed Respond Ultimate I Panel



Conwed Respond Ultimate I is an acoustical wall and ceiling panel designed for use in areas requiring abuse resistance and acoustical absorption. It utilizes a glass fiber core faced with an acoustically transparent open perforated rigid vinyl sheet and wrapped with fabric or vinyl. Ideal for use in: gymnasiums, theatres, and multi-purpose rooms. Conwed, 1205 Worden Ave. E., Ladysmith, WI 54848, 800-932-2383, Fax: 800-833-4798.

Conwed

Circle 57 on Inquiry card

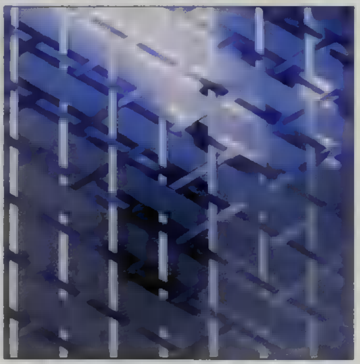
HEAT-N-GLO Fireplace Products

Looking for quality fireplaces that combine efficiency and aesthetics? Call for our brochure on energy-saving built-in gas or woodburning fireplaces. Including see-thru, three and four sided glass fireplaces, inserts for pre-existing fireplaces or our direct-vent (no chimney) gas fireplace available with remote control. Call 612-890-8367.

Heat-N-Glo

Circle [illegible] on Inquiry card

Sheet Metal Decoration



INTRODUCING THE NEW ALPHA COLLECTION FOR 1995. With 24 patterns to choose from, ranging from the most basic vandal resistant **TEXTURES**, to innovative **STANDARDS** and our new **ULTRA Series** (photo). Patterns come in standard sheet sizes with border-to-border decorations, using distinctive finishes on a variety of metal surfaces for elevator doors and interiors, wall panels, column covers and trim. Starting at less than $10 per sq. ft. for Textures, the average price for stainless steel Standards is $12 to $15 per sq. ft.. Call 800-537-1127

Surface Design + Technology

Circle 59 on Inquiry card

Manufacturers' Spotlight

Bicycle Lockers

CycLockers are all-steel modular bicycle storage cabinets that accommodate two bicycles per unit. Modules can be used individually or in linked groups sharing common walls. Choose from over 170 coating colors, two-toned color schemes, or stainless steel versions. For new brochure call 1-800/547-1940 ; request extension 530. Columbia Cascade Co. Portland, Oregon.

Columbia Cascade

Circle 60 on Inquiry card

Fence Systems

This new aesthetically appealing Euro-design fence system combines see-thru good looks with strength and durability of 6-gauge galvanized steel mesh. Powder-coated in a large variety of colors to suit any design and enhance the appearance and security of any property it surrounds, this fence system is virtually unclimbable, rugged, maintenance-free and easy to install. OMEGA FENCE SYSTEMS, Laval, Quebec. 1-800-836-6342.

Omega Fence Systems

Ciorcle 61 on Inquiry card

SENERGY CAD-NET SOFTWARE

Architects can cut hours to minutes when designing exterior walls with Senergy's CAD-NET, a new AutoCAD - compatible (V.11 and higher) specification & detail drawing program for Exterior insulation & Finish Systems (EIFS). The CAD-NET program provides specifications & details for Senergy's Senerflex, Senerthik & QRsystem. CAD-NET is available on either 3-1/2" or 5-1/4" diskettes. **For more information: Senergy 1-800-221-WALL. Leaders in EIFS.**

Senergy

Circle 62 on Inquiry card

REASONS Stacking System for Improved Office Spaces

REASONS from Transwall Corp., a manufacturer of movable office partitions & systems furniture, is a new stacking system designed to provide improved office space facilities with maximum flexibility & a minimum of parts inventory. It offers quick off-module changes for work surfaces & overhead storage, which can easily be rearranged on horizontal rails without structural panel changes. Total wire management is provided in the 4" thick panels, as well as an unlimited choice of aesthetic color selections.

Transwall Corp.

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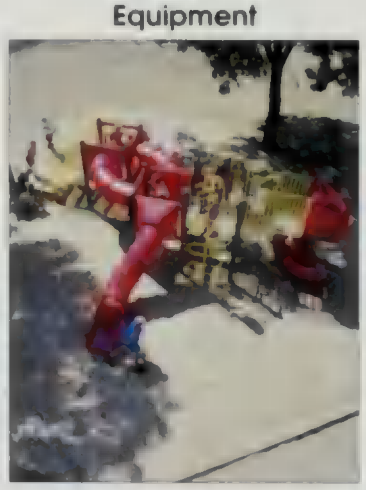
Grilles

Atlas Door Corporation, the leader in commercial and industrial doors, offers rolling grilles in a comprehensive array of materials, sizes, and patterns. These grilles are [illegible] for use in shopping centers, [illegible], garages, [illegible]

Play Equipment



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Gametime

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UAF Student-Friendly Recreation Center

[illegible] surfacer systems, [illegible]

Connor•AGA

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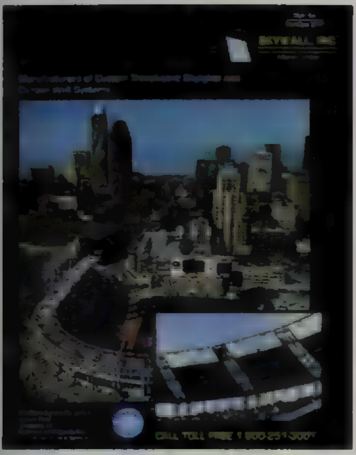
Interior Systems LaCrosse

***Arkid* tecture Funscapes** i the newest addition t **Interiors Systems' Signatur Series**. The *Arkid* tectur collection uses a uniqu computerized cuttin system to produce standar and custom acoustic ceiling tile designs f schools, children's clinic hospitals, daycare center retail stores. Use single multiple panels with a design, logo, or color. C 1-800-782-0070.

Interior Systems

Circle 67 on Inquiry card

Custom Translucent Skylights & Curtainwall



Design your next project with diffused light. Skywall Translucent Skylights and Curtainwall Systems offer a wide variety of grid patterns, color combinations and styles, including versatile SkyCurve and custom configurations. Virtually shatterproof and maintenance free, these lightweight panels provide problem-free installation in many ways not possible with other systems. Complete design and technical assistance available. 1-800-251-3001.

Skywall, Inc.

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TOTAL DOOR® SYSTEMS by OPENINGS®

The TOTAL DOOR® SYSTEM is an architect-designed integrated door assembly. It includes prefinished door panels and all hardware. Fire rated pairs do not require coordinators, vertical rods, astragals, flush bolts or floor strikes. Will retrofit to any frame. Meets all codes and ADA. Wood and metal faces available to 3 hours. Lifetime limited warranty on locks and panics. OPENINGS, 40 West Howard, Pontiac, MI 48342, 1-800-852-6660.

OPENINGS.

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Dock Equipment

The dock equipment brochure from BLUE GIANT incorporates architectural specifications with typical application descriptions and detailed feature photographs. Location photos show the many and varied types of loading dock equipment manufactured by BLUE GIANT and installed around the globe. BLUE GIANT USA Corp., One Industrial Park Dr., Pell City AL 35125. (800) USA-BLUE. Fax: 205-884-1504

BLUE GIANT USA Corp.

Circle 70 on Inquiry card

Accessible Lavatory Insulation

A full color catalog will explain the different Handy-Shield safety covers offered for the new or retrofit projects that need to comply with the American Disabilities Act. The specific use, sample specifications, drawings and color choice are all summarized in this easy to understand catalog.

Plumberex

Circle 71 on Inquiry card

Dricon® Fire Retardant Treated Wood

Introduced in 1981, Dricon® FRTW combines an outstanding performance record with the benefits of FRTW construction. It carries a 40-year warranty, is registered with EPA for termite resistance, complies with all three model codes, and provides economical fire protection on all surfaces and throughout the panel thickness. This brochure explains its use and specification.
Hickson Corp.
1955 Lake Park Dr., Suite 250,
Smyrna, GA 30080.
404-801-6600.

Hickson Corp.

Circle 72 on Inquiry card

Nature Guard Fiber Cement Shakes

Louisiana-Pacific's Nature Guard® fiber cement roof shakes have the natural texture and tones of cedar shakes, with the added benefit of a Class A fire-rating. Nature Guard shakes resist the damaging effects of sun, water, humidity, rot, fungus, and termites. They contain no asbestos, formaldehyde, or resins. Available in three colors. For a free brochure, please call **(800) 299-0028, ext. 311.**

Louisiana-Pacific

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Get the latest word on oriented strand board, the engineered structural panel. Range of panel size and thickness means fewer design constraints and less waste. Applications include: wall sheathing, roof sheathing, subfloors, single-layer floors, and I-beams. Plus, OSB is approved by all major model building codes. Call the Structural Board Association (416) 730-9090 or fax (416) 730-9013.

Structural Board Assn.

Circle 73 on Inquiry card

Mohawk Commercial Carpet

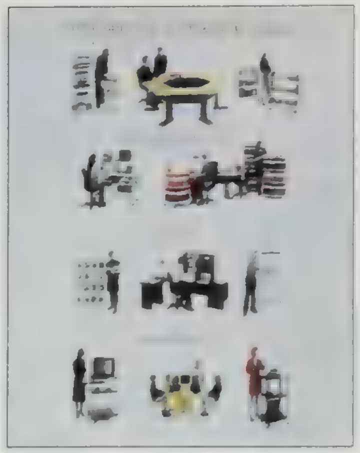
A collection of coordinating patterns and solids from Mohawk Commercial Carpet and AlliedSignal Fibers. It includes a wide variety of commercial carpets - from solid color cut piles to graphics and wovens. The brochure features photographs of the carpets paired with the Urban Textures which inspired them. MOHAWK COMMERCIAL CARPET 800-618-1234.

Mohawk Commercial Carpet

Circle 74 on Inquiry card

Manufacturers' Spotlight

1995 Product Guide



Bretford's new 1995 Product Guide features communication support furniture products including electric projection screens and television mounting systems, conference and training room furniture along with Bretford's audio visual support products. Several sizes and options are available to meet your needs. We can also meet custom specifications. Call toll-free 800-521-9614.

Bretford Manufacturing

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Rinnai Vent-Free Hearth Products

Rinnai brings you the fireplace you can put almost anywhere! Our environmentally safe vent-free gas fireplaces and logs are 99.9% efficient and burn so clean that no venting is required. The HearthGlo fireplace (shown) is self-contained, compact and simple to install on any wall in your home. And with no electricity required, Rinnai vent-free gas fireplaces and logs make the perfect back-up in the event of power outages. Rinnai America, 1662 Lukken Industrial Drive West, LaGrange, GA 30240, (800) 621-9419

Rinnai America

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Barrier-Free Entrance

Horton Automatics EasyAccess™ Series 7000 and Series 4000 LE Swing Door Operators make complying with Americans With Disabilities Act "Easily Accomplishable". The Series 7000 or Series 4000 LE Swing Door Operator can be installed to most existing doors and requires no structural modifications. Installation of either operator helps create an affordably priced, barrier-free entrance. **Automatic operation with a push of a button.**

Horton Automatics

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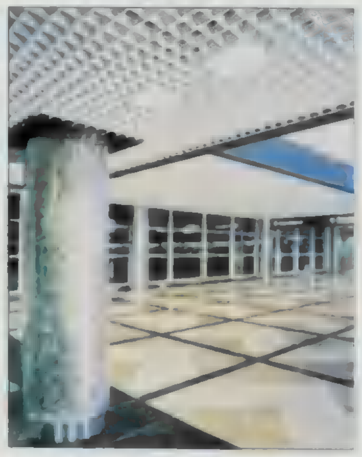
Ultra-Lite natural granites, marbles, limestones & slates. Offering natural stones with 80% less weight. Reinforced for high impact & flexural strength. Especially well suited for renovation & reclad. Saves on back-up framing & structure requirements. Reduce installing labor costs. Used on building exteriors throughout the world. Also elevator cab & lobby cladding, ceilings & locations requiring real stone but less weight.

Stone Panels, Inc.

Circle 79 on Inquiry card

Metal Ceiling Systems



The design advantages of Hunter Douglas Metal Ceiling Systems are prominently displayed throughout the new Denver Airport. The open cell system allowed designers to create dimension [illegible]. The [illegible] system [illegible] [illegible] and [illegible]

Chadsworth Columns

Color brochures feature wood, fiberglass, polyester, E.P.S., stone and marble columns. Variety of sizes and styles. Round, square or octagonal with plain or fluted shafts. Loads-bearing for exterior or interior applications. Job site delivery. Largest selection anywhere. For catalog (800) 394-5177. Sales (404) 876-5410. Free brochures.

Chadsworth Columns

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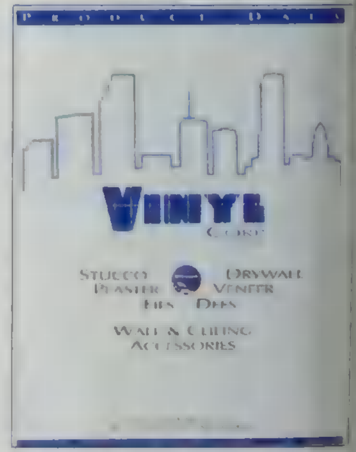
WonDoor Corporation, the world's leading manufacturer of accordion-type fire doors, introduces a new line of UL approved swing-type fire doors with recessed hardware. Called "Innovation", the new doors feature a totally clean look, completely eliminating unsightly hinge knuckles, vertical rod lines, floor bolts, and protruding fire exit hardware used on most fire doors.

WonDoor Corp.

Circle [illegible] on Inquiry card

New Product Catalog

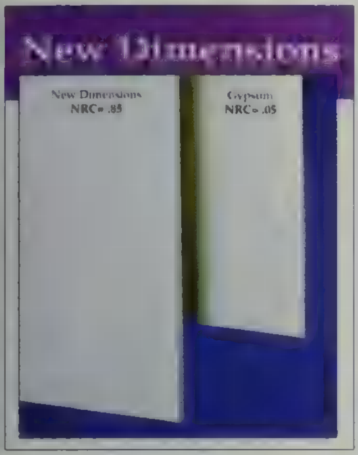


Vinyl Corp. manufacture the most extensive line o over 500 quality wall anc ceiling accessories fo stucco, plaster, EIFS, DEFS veneer and drywall. Al accessories are exclusivel manufactured with Geon Virgin Vinyl compounds. Fo more information call (800 648-4695, and ask for Vin Corp's new 44 pag product catalog. VINY Corp., 8255 NW 70th Stree Miami, FL 33166

Vinyl Corp.

Circle 83 on Inquiry card

New Acoustical Wall & Ceiling Treatment



A New Concept In Acoustical Treatment

New Dimensions is a unique line of acoustical wall and ceiling panels that look like painted drywall yet offers the superior sound control of a high performance acoustical product. Panels come in custom sizes and colors and are available curved for vaulted ceilings. For information call 1-800-359-3312.
Wall Technology, Inc.

Wall Technology, Inc.

Circle 84 on Inquiry card

Door and Wall Protection Systems

IPC - Institutional Products Corporation is a manufacturer of high impact door, corner and wall protection systems. Our catalog illustrates a product line that includes Handrails, Corner Guards, Wall Guards, Kickplates and Wallcovering. Our durable vinyl products, offered in 50 designer colors, provide an attractive way to protect interior finishes from damage.

Institutional Prods. Corp.

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Architect. Full service design firm seeks principal level architect to lead the firm's architecture design effort. Must be registered with 15 years progressively responsible experience and strong marketing and design capabilities. Resume to The Sear-Brown Group, 85 Metro Park, Rochester, NY 14623. EOE.

Architectural Designer & Cadd Specialist needed by a southern Ohio Architectural & Interior Design Firm. Designer will design retail complexes in mixed use facilities in accordance with applicable building codes, regulations and standards. Perform retail planning. Confer with local officials and material vendors. Incorporate Fengshui traditions into contemporary designs. Prepare schematic [illegible] construction documents and [illegible] relative to construction [illegible] in Chinese. Prepare [illegible] design documents and [illegible] AutoCAD to create 3 [illegible] presentations to [illegible] throughout Asia, [illegible] P.R.C., Taiwan, [illegible] Japan and Hong [illegible] for a duration of 2 [illegible] Masters Degree in Architecture. Must also have Masters thesis in Fengshui or a graduate course lasting an academic year focusing upon Fengshui or 6 months of experience designing buildings in accordance with Fengshui traditions. Must read, speak and write Chinese. Must also have either 6 months experienced in job offered or 6 months experience using AutoCAD to create 3 dimensional computer models. 8:30 am - 5:30 pm. Mon.-Fri., 40 hrs./wk, $27,000.00 per year. Must have proof of legal authority to work permanently in U.S. Send resume in duplicate (No Calls) to J. Davies, JOB#00855, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, Ohio 43216.

Two years later we're still growing! Tupelo, Mississippi's unique economic growth and excellent community life have been recognized on the front page by the Wall Street Journal March 3, 1994, and National Public Radio's "All Things Considered", segment on July 18, 1994. As this model community continues its planned expansion, opportunities exist to join an established, progressive firm responding to this area's growth by offering architectural & design/build services. The following positions are available for innovative team players with solid and current experience in healthcare/commercial/industrial projects; *Job Captain: Senior architectural draftsperson with in-depth knowledge of building technology, architectural detailing & CADD production. Good knowledge of computer hardware & software systems essential. * Production Staff: Highly motivated CADD operator/intern architect w/2-5 years architectural production experience.* Project Architect: Knowledgeable & aggressive mid-level architect w/3-7 years experience to be responsible for design development/CADD production. Must possess common sense and good judgment in dealing with design & client issues. Contact: Barbara Basinger, McCarty Architects, 533 West Main Street, Tupelo, MS 38801. Phone 601-844-4400, Fax 601-844-0500.

Project Architect Renovation or Restoration. Researches & plans the restoration of 15th & 16th Cent. bldgs in N. Italy, Aust., & E. Eur.for development into vacation accommodations for resale to U.S. or foreign investors. Plans interior renovations suitable for plumbing, kitc., heat'g & AC facilities, keeping the hist. integrity of the bldg. interiors. Plans layout & makes scale drawings of repairs. Prepares contract docs. for contractors. Designs plans for exter. restoration of bldgs. in keeping with hist & civic architect. records maint. by the state & local gov'ts. Hires & manages local artisans, carpenters & plumbers, etc. & conducts periodic on site inspections. Is the link with local architects & restorers so that modern installations maintain bldgs' hist. integrity. Consults on renovation or construction of period furnishings. Wk/hrs.: 40hrs.: 8:30a.m.-5:30p.m. Sal. $16,00/hr. Req. 5yrs. college B.A.- Archit. Coursewk req. in restoration & renovation of 15th & 16th Cent. hist. bldgs. 1 1/2 yrs exp. as Project. Archit. Renovation or Restoration. Travel req to sites in N. Italy, Aust., & E. Eur. 5-6 times/yr, for 2 wks-4 mos. per trip to manage project. Must have proof of legal auth. to work permanently in U.S. Send 2 copies of resumes to: Ill. Dept. of Empl. Sec., 3 South, 401 S. State St. Chicago, IL 60605, Attn: Janet Aschenbrenner Ref #V-IL-11583-A. No calls. An Employer Paid Ad.

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The City of San Jose is seeking an experienced and qualified development team to undertake the renovation and operation of the historic Fox Theatre. The 1,800-seat theatre is a San Jose City Landmark, and is the only 1930's era movie theatre remaining in Downtown San Jose.

For additional information and an RFP package, please contact:

Robert Lyons, Senior Negotiating Officer; or Robert Ruff, Projects Coordinator
Redevelopment Agency of the City of San Jose
50 West San Fernando Street Suite 900 San Jose, CA 95113
Phone: (408) 277-4744 Fax: (408) 277-3045

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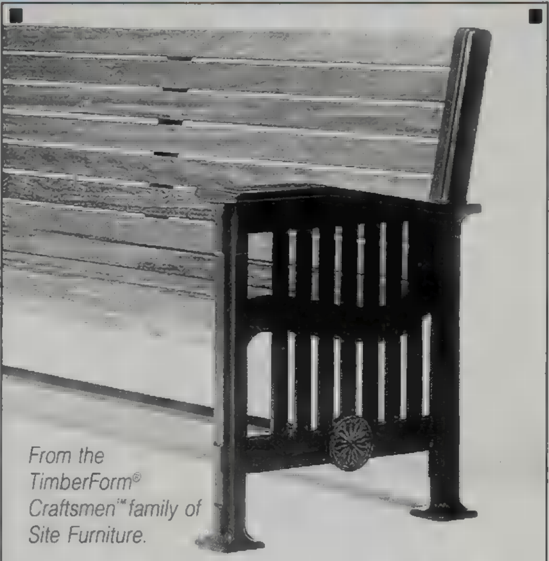

Catalog, call toll-free 1-800/547-1940, Ext. 531.

Columbia Cascade
1975 S.W. Fifth Ave. Portland, OR 97201 FAX 503/223-4530

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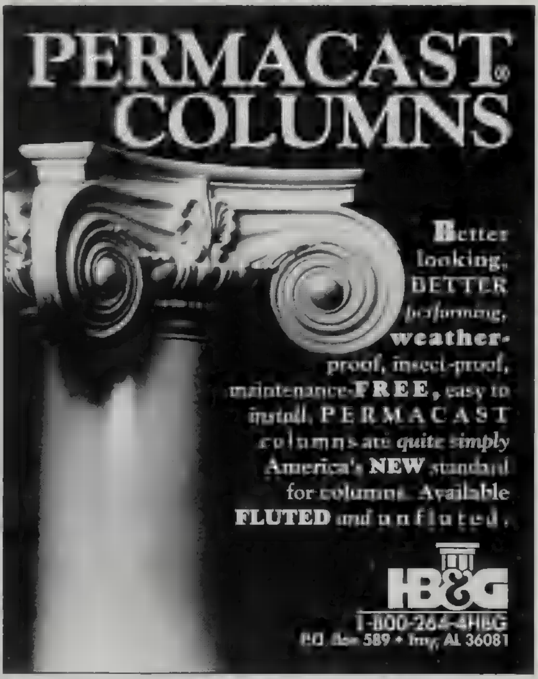

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Advertising Index

Bold Face - page number
Italics - Reader Service number

For detailed data, prefiled catalogs of the manufacturers listed below are available in your 1995 Sweet's Catalog File as follows:

(G) General Building & Renovation
(E) Engineering & Retrofit
(I) Industrial Construction & Renovation
(H) Homebuilding & Remodeling
(C) Contract Interiors
(L) Light Source

A

Advent Lighting Corp., **Cov.III** ; *89*
(800) 739-9144
A/E/C Systems '95, **116** ; *33*
(800) 451-1196
Armstrong World Industries, Inc., **Cov.II-1** ; *1* [G-E]
(800) 448-1405
Artifice, Inc., **121** ; *39*
(800) 203-8324
Artemide, **47** ; *12*
(800) 359-7040
Autodesk, **2-3**
(800) 964-6432
Auton Co., **117 ;** *35* [G-C]
(805) 257-9282
Azrock Industries, Inc., **10-11** ; *5* [G-C]
(800) 921-1717

B

Birdair, Inc., **59** ; *17* [G]
(800) 622-2246

C

CalComp, **111** ; *28*
(800) 932-1212
Construction Specifications Institute, **119** ; *36*
CPI International, **55** ; *15*
(800) 759-6985

D

Decoustics, **124** ; *42*
(800) 387-3809
Directory of Specialty Consultants, **118**
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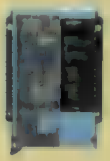

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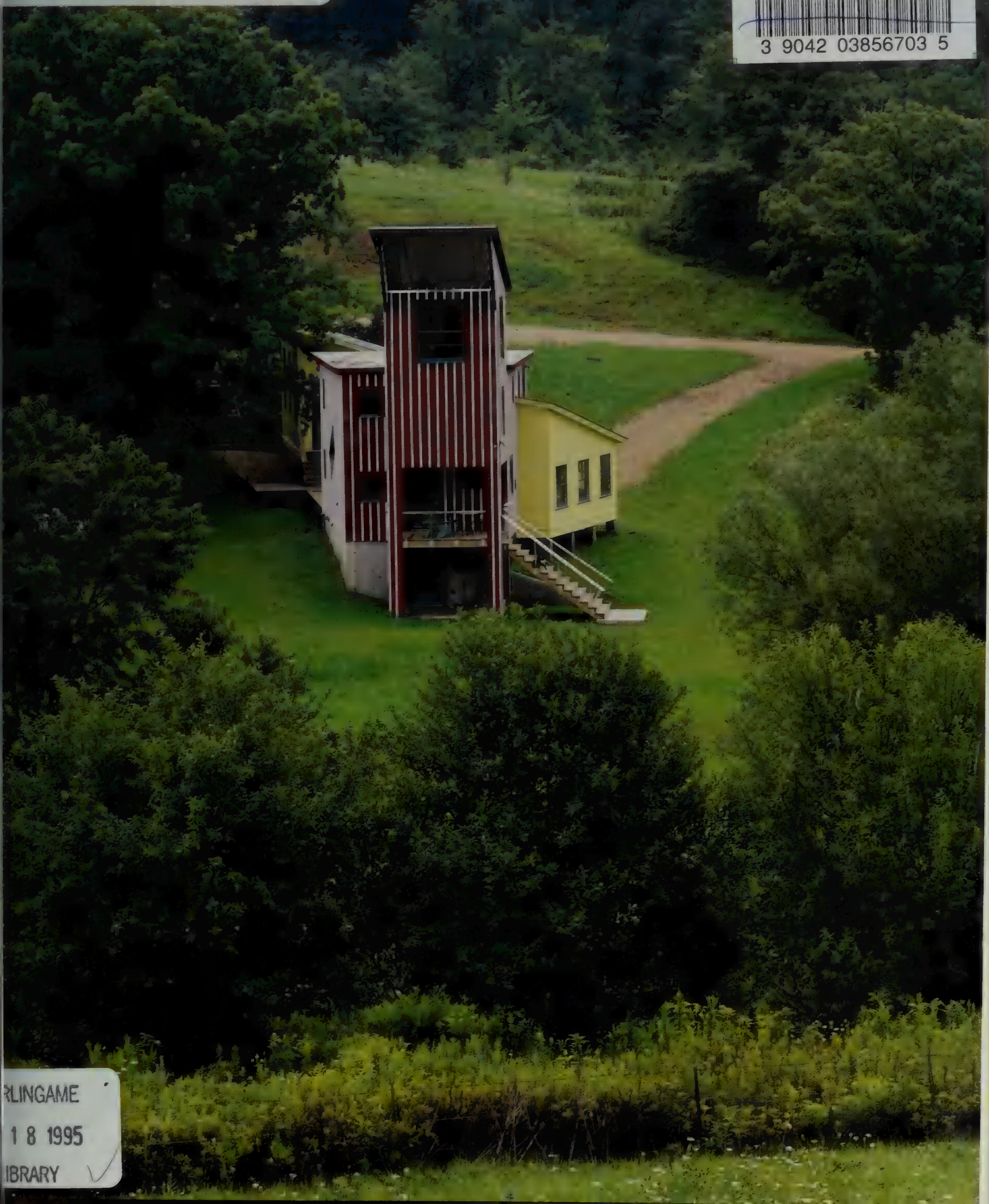

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May 5-8
AIA National Convention and Expo will be held at the Georgia World Conference Center, Atlanta. For more information, call 800/305-7737.

May 6
Walter Wagner Education Forum at AIA convention. For information, call Virgil Carter at 202/626-7300 or Steve Kliment, 212/512-3104.

May 23-25
Lightfair International, Navy Pier, Chicago. Call 404/220-2217 for conference information.

May 27
"Health Care Architecture in an Era of Restraints" seminar, Union of Architects Public Health Group in conjunction with its annual meeting, Budapest. Call 011-49-211-4-5488-0 or fax 011-49-211-4-5488-50 for details.

Through May 15
Jean Nouvel exhibition and media show, Architektur Zentrum Wien, Vienna. Call 011-43-1-522-31-15, fax 011-43-1-522-31-17 for details.

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A/E/C Systems will hold its 1995 conference and exhibit at the Georgia World Conference Center, Atlanta. Call Sharon Price at 800/451-1196; 203/665-0153, or fax her at 203/666-4782.

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SMPS conference on "Marketing With Computer-Supported Presentations," Georgia World [illegible] Center, Atlanta. Call [illegible]15, fax 703/549-2498 [illegible]

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June 22-24
The New York Landmarks Conservancy conference on stained-glass windows in American buildings, Grace Church, 802 Broadway at Tenth Street, New York City. Call 914/278-2187 for information and reservations.

June 23-25
Construction Specifications Institute (CSI) annual convention and trade show, Minneapolis. Call 800/689-2900 for information.

Through June 24
"Temple of Liberty: Building the Capitol for a New Nation" exhibition in the Madison Gallery of the Library of Congress, James Madison Building, traces the effort to create a building reflecting the new nation's ideals. Bicentennial event features newly commissioned models of the Capitol and nearly 200 original documents. Call 202/707-2905 for more information.

Competitions

- A $15,000 prize will be awarded by the Royal Oak Foundation to the winning entry that displays "a sympathetic collaboration among the three disciplines of architecture, interior design, and landscape architecture." Submissions must be received between April 1 and 15. Call 212/966-6565.
- Portfolio submissions are due April 14 for the Burnham Prize competition sponsored by the Chicago Architectural Club. Eligible are architects under 40 who received their professional degrees after 1985 and are residents of one of eight Midwestern states. Call 708/940-9600 (ext. 1295) for more information.
- Submission deadline is April 28 for design of the Minamata, Japan, memorial to victims of mercury contamination—the "Minamata Disease." Arata Isozaki will judge the entries. Call 81/966-63-1111.
- Entries for Southern Living magazine's Southern Home Awards competition for outstanding residential design in six categories are due May 31. Call 800/366-4712 for information.
- The James Marston Fitch Charitable Trust will award a $10,000 research grant and other discretionary smaller grants to mid-career professionals in one or more of the following fields: historic preservation, architecture, landscape architecture, urban design, environmental planning, architectural history, and the decorative arts. Application deadline: May 1. Call the Trust for more information at the offices of Beyer Blinder Belle, 212/777-7800.
- The Young Architects Forum will hold a juried exhibit May 5 open to all architect interns. Write Rodney Dionisio, 1215 Hightower Trail, Building B Suite 220, Atlanta Ga. 30350 for details.
- Design for Transportation Awards Program entries due May 15 in the following categories: architecture (passenger and freight terminals, stations, ports, other structures); historic preservation; urban design and planning; special interest (ADA provisions; mixed-use development). Call Thomas Grooms at 202/682-5437 for entry forms and further information.
- The End open-design competition entries are due May 31. The site is in central downtown Los Angeles, the theme is justice, the program, an urban memorial park to victims of violent crime. Registration fee: $50; first prize, $10,000. Call/fax 213/296-6226.
- Western Home Awards competition application forms are due April 10. Contact AIA/*Sunset Magazine* Awards Committee, 80 Willow Road, Menlo Park, CA 94025 for more information.

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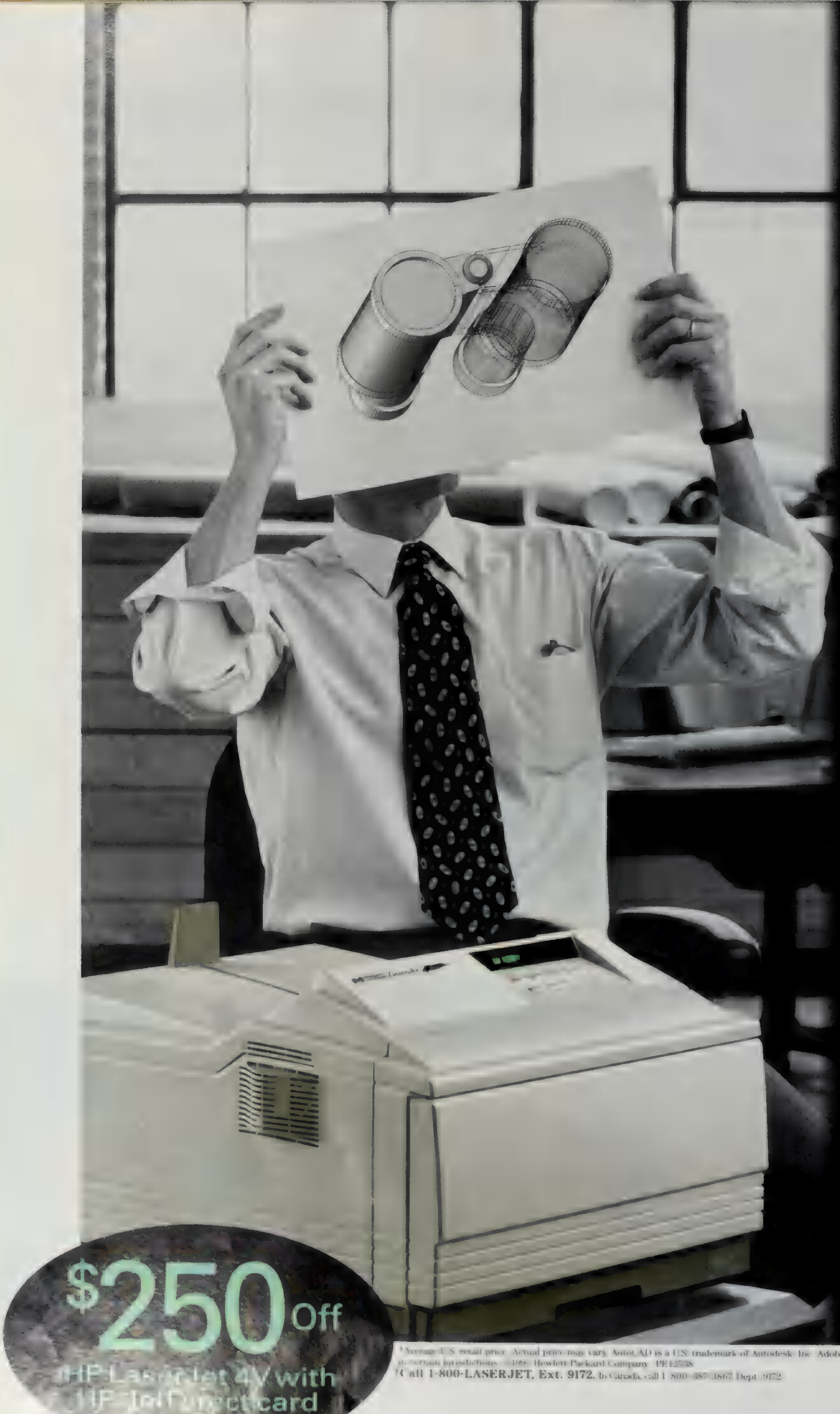

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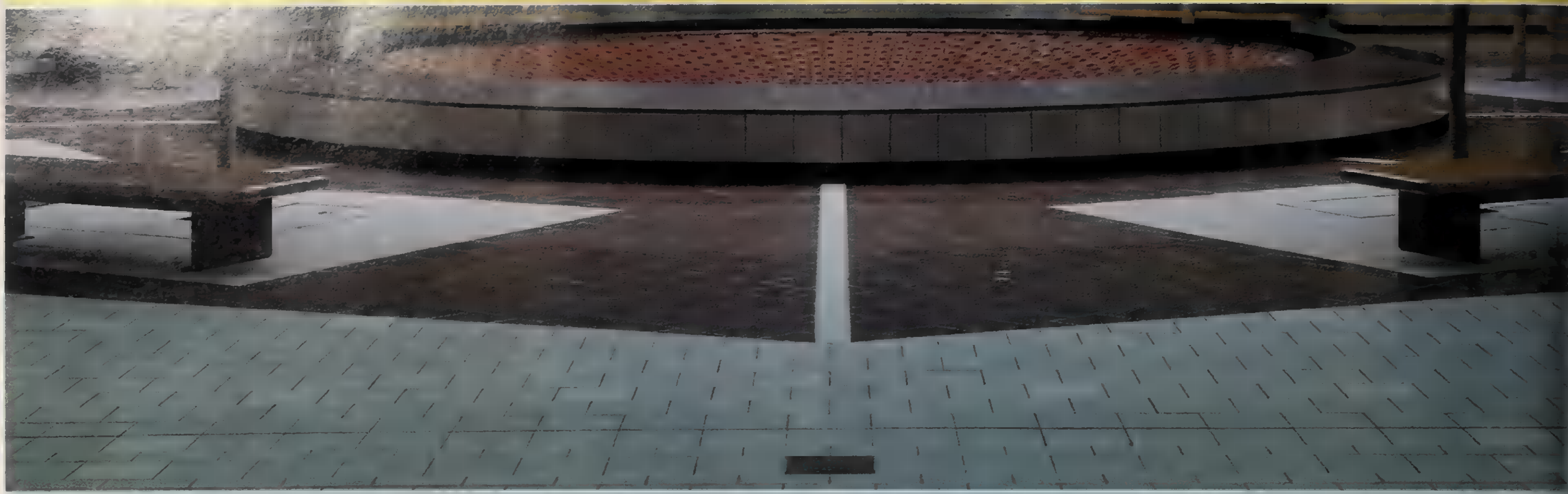

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ARCHITECTURAL RECORD Editorial

New A vs. E Dispute Is a No-Win Case

A horse long thought dead has been given a new lease on life ever since the National Society of Professional Engineers' Administrative Council sent a letter on January 6 to the Antitrust Division of the Justice Department, urging a look into alleged activities by architectural groups (only NSPE and DOJ know which groups, and they aren't telling) aimed at limiting engineers' access to the design of buildings.

This would have been less of a shock had not the AIA in 1972 and again in 1990 undergone antitrust traumas over ethical rules restricting competitive price bids—events that ended in consent degrees after untold thousands of hours of staff work and millions in legal expenses. Understandably, neither the AIA nor its state components want to repeat the process, and that is why the letter, which at this mid-March writing is still a landmine on some Justice Department functionary's desk, is causing such anxiety in the realms of organized architecture.

The issue has for generations roiled relations between architects and engineers—and, indeed, other groups competing for business in hard times. A very few states either allow engineers and architects to work in each others' turf, or else forbid it totally. In most states, says NCARB general counsel Carl Sapers, licensing laws require buildings intended, in the language of the law, for "human habitation and occupancy," to be designed by an architect (with certain exceptions, such as custodian buildings incidental to the operation of a structure such as a dam or bridge). Engineers for their part design structures and systems. Architects claim with good reason that a building is more than a mere assembly of products and materials that must not be allowed to fall down, burn, or otherwise endanger the health, safety, or welfare of occupants. Buildings also must meet human needs for comfort, light, air, and mental uplift; and face a great array of urban design and other challenges which architects spend seven years learning and another three in practice before taking a unique licensing exam. Engineers, unlike architects, specialize in highly discrete disciplines, from chemical to mechanical to civil to structural. How does this qualify them, architects ask, to design buildings for people?

Monte Phillips, who heads the 70,000 member-strong, heavily civil engineer-weighted NSPE, has a different slant altogether. He told RECORD that to him, it's an issue of taking away the public's right to select its building design services from any qualified source, including engineers. As he sees it, the intervention of local architectural licensing board members and local architectural organizations in some recent cases is nothing less than a "coordinated plan" to restrict freedom of choice. AIA president Chester Widom, who last April in Tucson signed a statement of cooperation with NCARB, NSPE and ACEC (an engineering society that is staying on the sidelines this time, to Phillips' chagrin), says that all is covered under the Tucson agreement.

To Sapers, the idea of a concerted effort by architects to keep engineers away from building design is "palpable nonsense." And he quotes Mario Salvadori from an NCARB survey of prominent engineers and architects: "It is inconceivable that an engineer who knows what architecture is would put up any building that is for human occupancy of any kind, without an architect."

But in the long term the entire issue of turf is moot. Some day we are going to see so-called expert systems which will concentrate knowledge in great databases accessible to all, blur distinctions among the design professions, and spawn a whole new approach to licensing. Meanwhile, legislatures in most states seem to have assigned buildings for human occupancy to architects. *Stephen A. Kliment*

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LEVITON

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tlanta

;eorgia Has the '96 Summer)lympics on its Mind

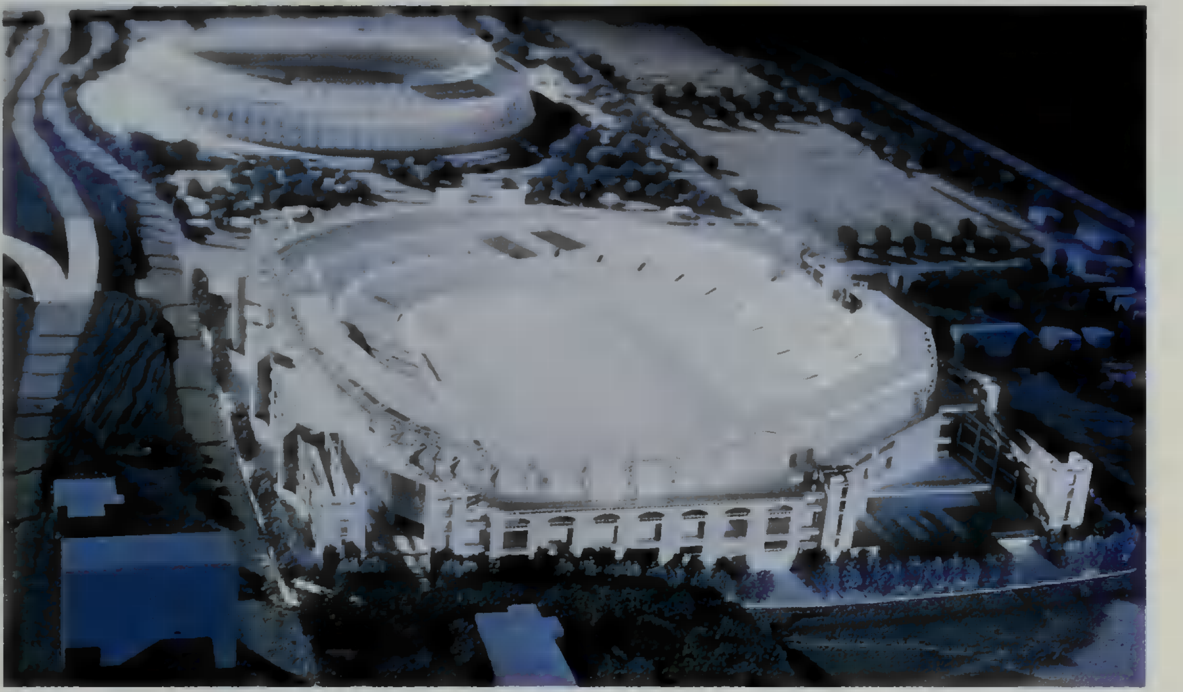
1., 2. Olympic Stadium: Heery; Rosser Fabrap; Ellerbe-Becket.
3. International Festival area: MSTSD Architects, Atlanta.
4. Aquatic Center: Stanley Love-Stanley; Smallwood, Reynolds Stewart, Stewart.

ith about 500 days remaining until the Cen-
nnial holding of the modern Olympic
ımes debuts in its city, Atlanta's planning
d construction activity picked up notice-
ly in mid-March. Many of the Summer
ympics '96 sites are scheduled for near-
mpletion in time for a dry run during the
n Pacific Games this August.

lanta's game plan for post-Olympics build-
gs is based on a break-even doctrine,
posed by the Atlanta Committee for the
ympic Games (ACOG) on all facilities. The
,000-seat Olympic Stadium, for instance, a
09-million project, will be converted into
w home for the Atlanta Braves. The finan-
l sponsorship and influence of
oadcasting magnate Ted Turner's baseball
ınchise on the stadium project has played
gnificant role in its evolution from a Mod-
nist precast concrete-clad scheme to a
ıditional brick-arched, exposed-steel
ımework design, intended to evoke nostal-
ı for old inner-city ballparks.

ıe Aquatic Center, designed by two Atlanta-
sed minority-owned firms in joint venture,
o will have life after the Olympics. The
7.5-million open-air facility, with its
arspan 300- by 200-ft steel-trussed roof
d 13,000 seats (of which only 2,000 are per-
ınent) will become the property of Georgia
ch after the games. It plans to remove the
,000 temporary seats and their secondary
ucture and enclose the space.

e most memorable Olympic project may
ll be the one with the smallest construction
dget, the shortest life span, and no athletic
ents—a 17-acre International Festival
a, designed as a series of temporary, recy-
ble steel and fabric pavilions for
emonies, displays, and entertainment.
ıns for the open-air complex, by MSTSD
chitects of Atlanta, call for a carefully
ınned hierarchy of high- and low-ceiling
ınes and vertical panels to provide intrigu-
interior-like spaces. *John Hawkins*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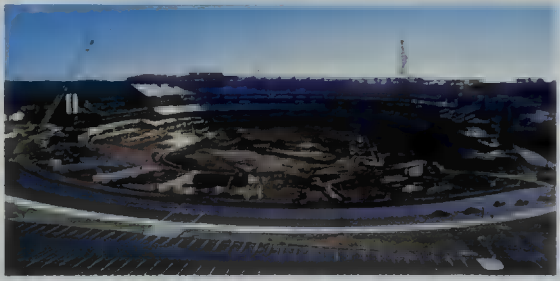
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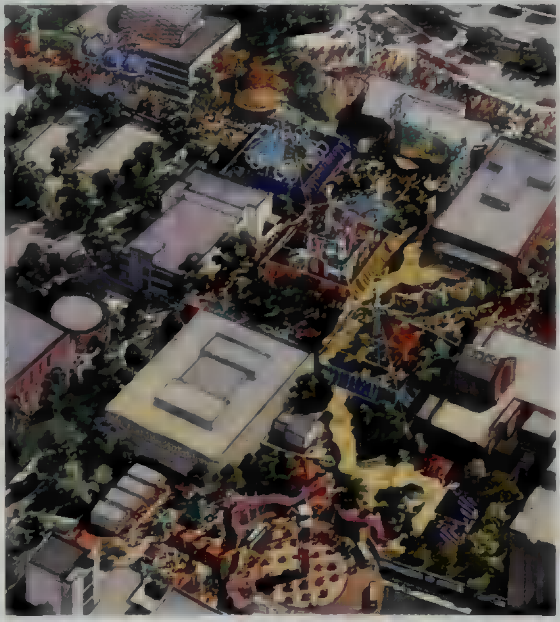
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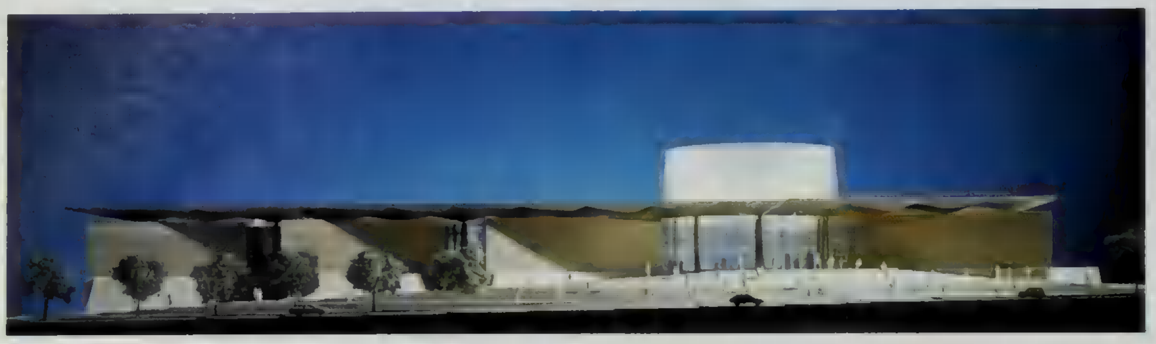
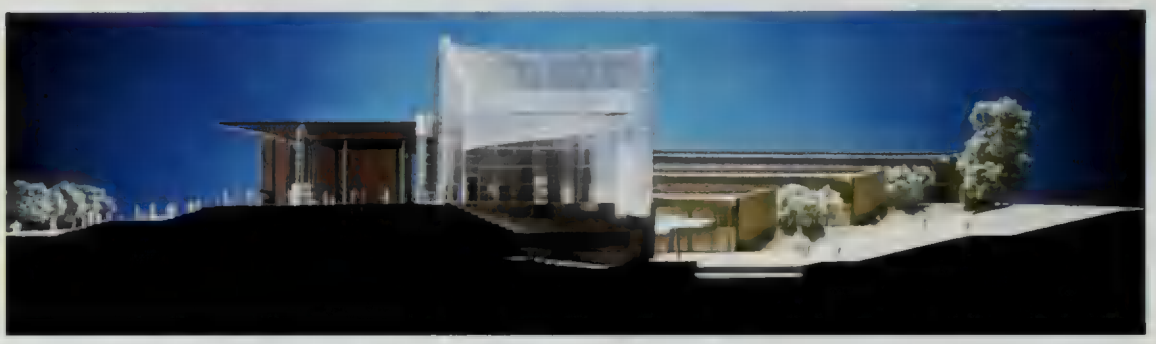
Cyprus

KPF Wins Competition to Design Nicosia's New Parliament



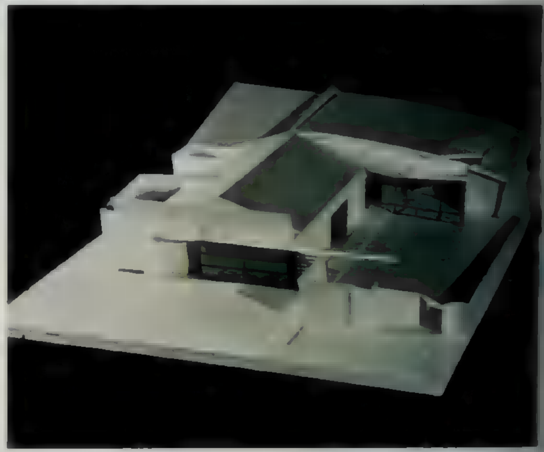


Kohn Pedersen Fox and D. Kythreotis and Associates have won a competition to design a new Parliament Building for Nicosia, Cyprus. The $32-million building is a 40,000-sq-ft square, dramatically sliced in two at an angle. The main, marble-clad foyer is anchored by a towering alabaster drum, which houses the Parliament chamber. Behind, the square dissolves into a massive garden, flanked by offices. In a democratic gesture, the garden connects with a parliamentary park to draw visitors into the site. ■

Los Angeles

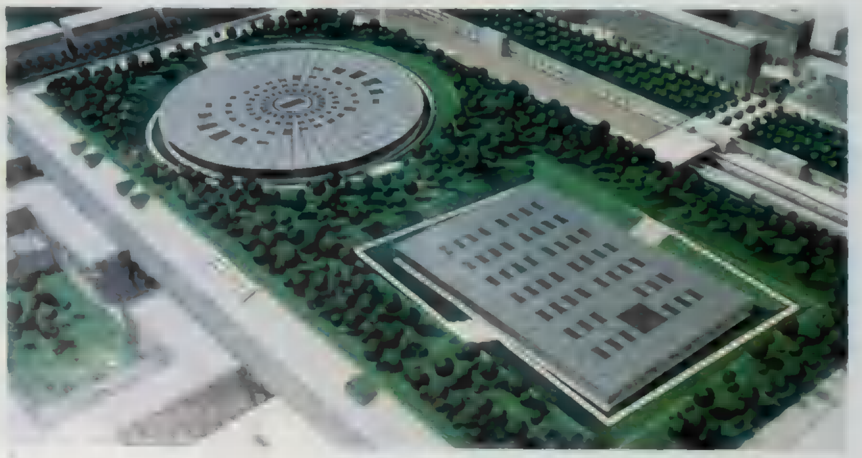
The '60s Meet the '90s With Panache

Melvyn Bernstein's Uyemura residence in Newport Beach, Calif., wraps banal '60s tract housing into more subtly articulated spaces. The elegant design adds a new living/bedroom space to an existing garage and bedroom. A new roof breaks from gentle arc to "folded plane" as it moves from living area to master bedroom. The living area's focus is an enclosed garden, while the master bedroom overlooks the Pacific. In keeping with its origami theme, the street facade folds irregularly as well. The project receive an AIA Los Angeles Design Award. ■



Berlin

World-Class Velodrome and Swimming-Pool Complex May Help East Berlin's Growth



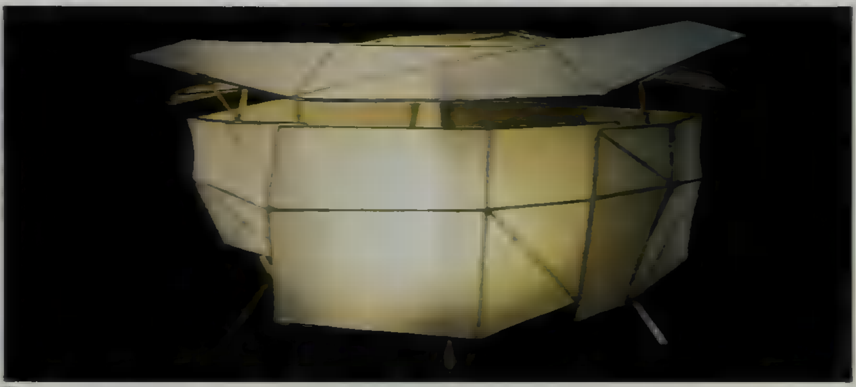
1

2

[illegible] Olympic Games but [illegible] Dominique Per[illegible] and swimming-pool [illegible] under construction, with [illegible] million sq ft of world-[illegible], the project will be an important impetus for growth in eastern Berlin. The minimalist design separates the two main programs into a circle for the cyclists and a rectangle for the pool (1). Each is submerged below a 10-hectare (24.7-acre) park to minimalize the impact of the massive geometry. When finished in 1998, the flat roofs of woven-metal fabric and two-layer-thick glass will act as reflecting "pools" by day and scintillating jewels by night. The re pool (2) will, of course, have real water.
Claire Downey

s Angeles

rchitects for Shelter Build Tiny Houses or Small Fry



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© Tom Bonner photos

e Architects for Shelter recently auctioned a dozen elaborate playhouses by a number .A architects, raising $25,000 for the an Park Community Center, which pro- s shelter and social services for children adults. The houses are large enough to play in, and the designs range from ultra-sophisticated to playfully absurd. Tim Felchlin designed a two-story "tree house," with a turret that pops out on top, like a series of stacked crates (1). An ingenious house, designed by Richard Warner, looks like an unraveled paper lantern, and functions like a tent. Canvas is stretched over a faceted steel frame, and a wing-like roof seems to hover above (2). Kanner Architects donated a "swiss cheese" cube balanced on a slide and a climbing wall (3). ■

sign

riefs

ank Lloyd Wright's still building- [illegible] Terrace, Wright's design for [illegible] plex in his hometown, Madison, Wis., thwarted by local politicians 57 years . But the [illegible] project, [illegible] railroad station and [illegible] has been revived as a [illegible] The [illegible] project is scheduled [illegible] in 1997.

Chicago, plans were announced to tore Wright's Prairie-School-style [illegible] e, the Robie House. The house, built in 9, will open as a museum [illegible]

e Southern California Institute of Archi- ture is setting up a referral service. The I-Arc Network will put potential clients in h with younger graduates through a 24- r number (310/574-1123), and provide n with resumes and photographs of their jects.

e Municipal Art Society in New York has ned Kid City, an exhibit that teaches chil- n about architecture and the environment. interactive show [illegible] ctural elements from [illegible] se, and "time machines" [illegible] mine the history of [illegible]

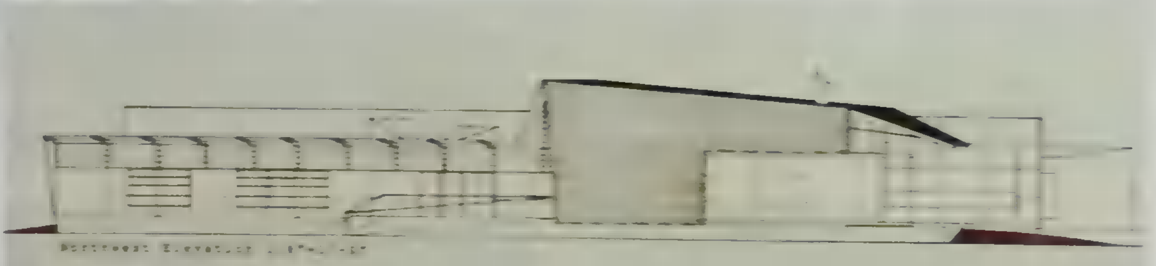
e American Society of Architectural Illus- ctivists has received the AIA's 1996 itute Honor Award. ■

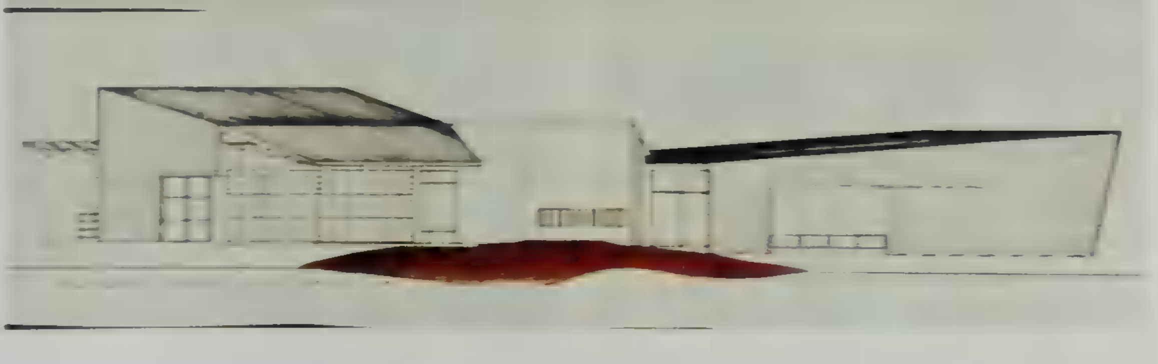
New Jersey

Head Start Competition Brings Architects' Touch to Childcare Facility

For 30 years, Head Start facilities have been banished mostly to church basements. But a competition organized by the Early Child Facility Fund acknowledges the contribution architecture can make to a learning environment. Cambridge, Mass., Fardjadi, Fardjadi, Scott's winning competition entry for a prototype school in New Jersey shows just how subtle that contribution can be.

The project rests on the back of a "turtle shell," a shallow mound that subtly lifts children off the ground. A sweeping roofscape slopes up from the building's central spine, which feeds into classrooms and leads from the main entrance out to tree-covered grounds in the back. There, an indoor playground with a claw-like roof can be opened or closed to the landscape. *Nicolai Ouroussoff*





Beyer Blinder Belle Is Honored With Firm of the Year Award For its "Collaboration With the Past"

Beyer Blinder Belle has won the American Institute of Architects' 1995 Architecture Firm of the Year Award. Best known for its work in preservation, the New York-based firm has quietly and cleverly rehabilitated a massive number of landmarks in its native city over a 25-year period.

Twenty years ago, the firm designed the South Street Seaport Museum Block in lower Manhattan—a laudable adaptive-re-use project that signaled the direction the firm would take: melding the past with the present. The Seaport project was esthetically rooted in the cast-iron architecture of an earlier time yet skillfully adapted to its new purpose: attracting tourists and the businesses that follow them. The firm calls this work a "collaboration with the past."

"Our philosophy," says John Belle, "is that buildings draw their solutions from their environment, their context, and their culture. That's what has kept us lively."

Since then, Beyer Blinder Belle has designed the Ellis Island Museum of Immigration, the (original) Museum of Broadcasting on Fifth Avenue, the Henri Bendel Store in the restored Rizzoli and Coty Buildings, and, further afield, McKim Mead and White's Newark Pennsylvania Station—all major projects that have had a tremendous impact on the fabric of New York City and environs.

Today, the firm is in the midst of two major rehabilitation projects. It is restoring Paul Rudolph's Modernist masterpiece, the Art and Architecture building at Yale University; and, perhaps the penultimate restoration, Grand Central Terminal [RECORD, February 1995, page 13].

Further north, projects include a recreation plan for the Erie Canal and travel plazas on the New York Thruway. Each plaza caters to its region: stone, lodge-like buildings in the Adirondacks; timber, barn-like structures in the Catskills. "We're now beginning [the] Albany to Buffalo [section]," says Belle. "We've reached every part of the state."

The award will be presented in May at the AIA national convention in Atlanta.
[illegible]

1980s

© Peter Aaron/Esto

1980: Museum of Broadcasting, New York City

© Brian Rose

1983: *South Street Seaport, NYC*

© Richard Berenholtz

1985: The Limited, New York City

1987: Dalton on Greenwich, NYC

1990s

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1990: Harborside, Jersey City, New Jersey

1990: Ellis Island, New York Harbor

FUTURE

©Peter A. G. Roper

Grand Central Terminal, New York City

Yale Art & Architecture Building, New Haven

A Twenty-Five-Year Award

oche Dinkeloo's "Enduringly Significant" ord Foundation

e of New York City's few true Modernist
dmarks was awarded the American Insti-
e of Architects' 1995 Twenty-Five-Year
ard. The Ford Foundation Building,
igned in 1967 by Kevin Roche John
ikeloo and Associates, got the award for
"enduring significance."

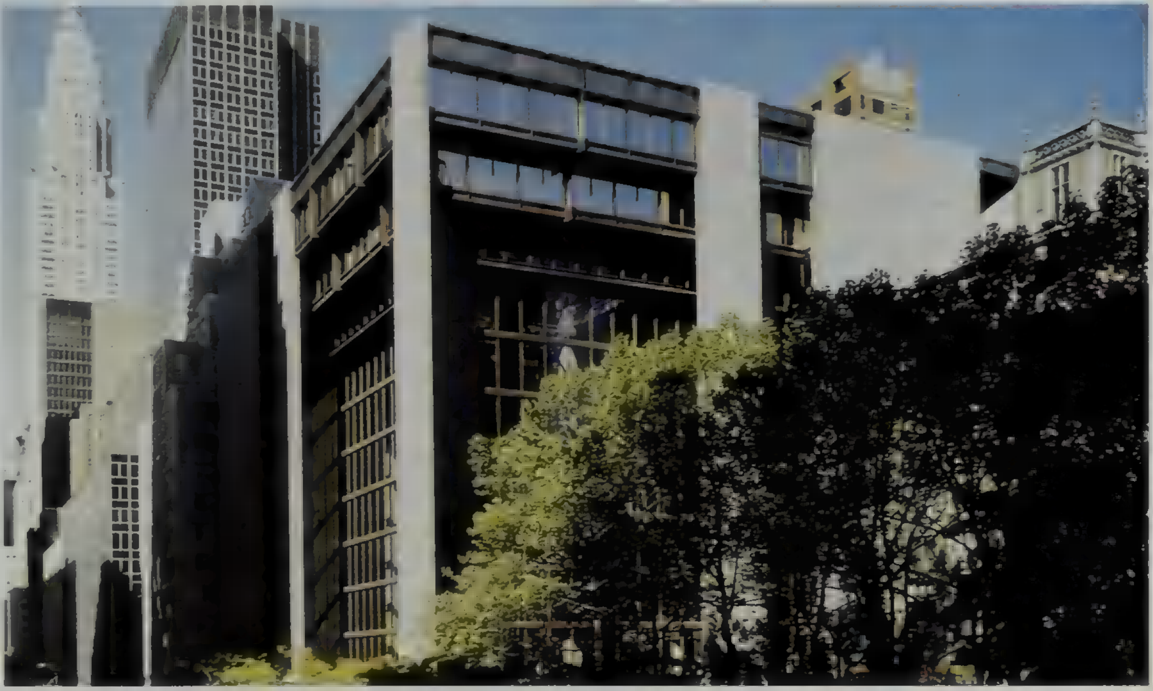
stled at the surprisingly peaceful east end
'orty-Second Street, the Ford Foundation
n L-shaped, midblock office building that
ips around two sides of its famous atrium,
ich shimmers with foliage. The pristine,
story glass space opens up to the south-
t, facing Tudor City and the East River.

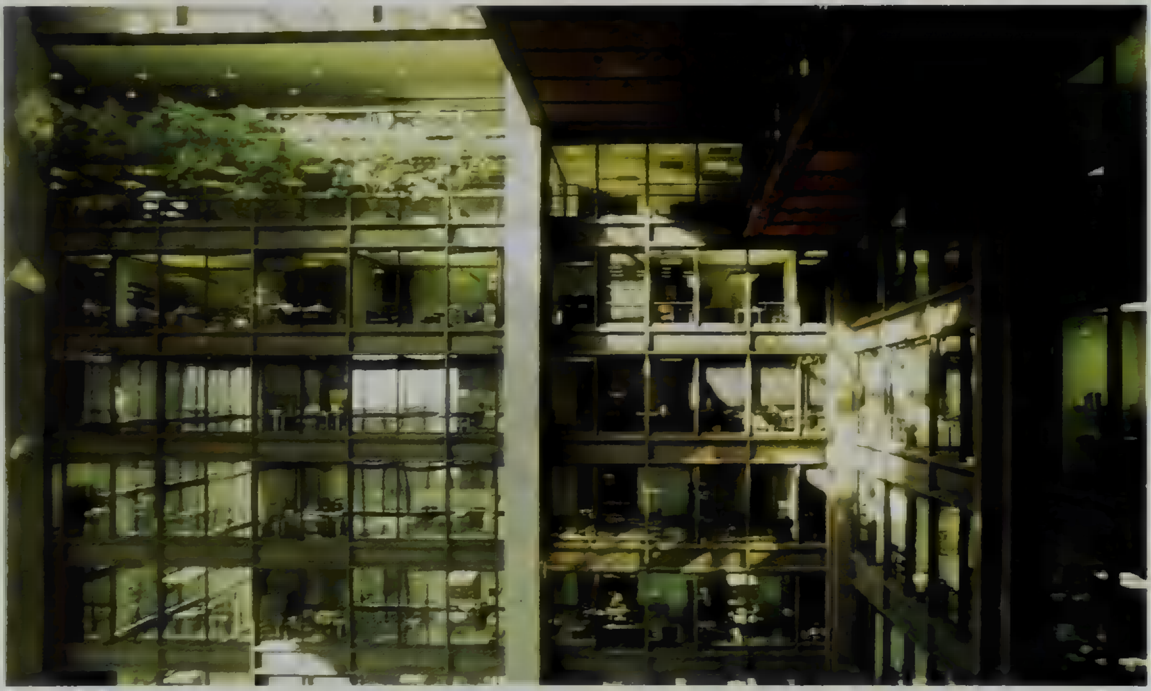
s masterpiece was what others adapted
d debased), infesting American cities with
iyriad of mundane atrium spaces. But
ie has ever replicated its chilling elegance.
re at the Ford Foundation, Roche once
l, "It will be possible to look across the
irt and see your fellow man or sit on a
ich in the garden and discuss the problems
Southeast Asia."

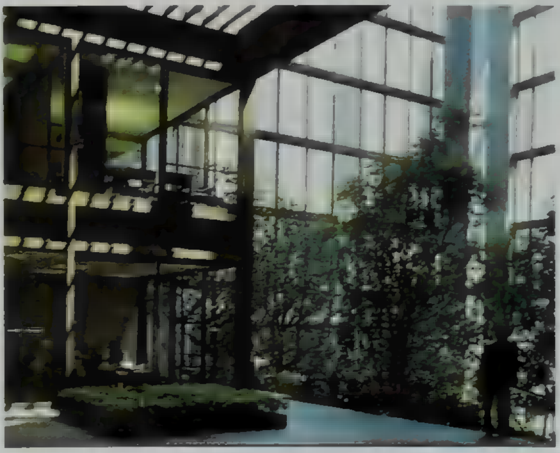
tside, the building's massive granite
imns and heavy upper stories give it a
emn, brooding air in keeping with its late
dernist language. But this impression
es when one enters the central space, the
imns thinning until they almost disappear,
rusting steel structure hanging lightly
ween them.

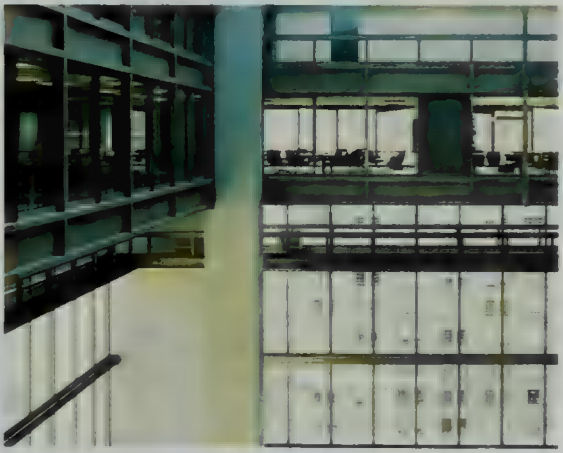
e celebrated space is bucolic and serene—
n aloof. Entering from Forty-Second
eet, a gently rising brick stair follows the
inge in grade up to Forty-Third Street,
passing the garden. The garden itself
rls down towards a fountain, the atrium's
icate glass walls shooting upwards behind
Despite Roche's prediction, there is, in
t, nowhere to sit in the space.) The com-
tee noted that there have been no changes
he building's use or design since it opened
years ago.

e award was presented at the AIA's late-
ter Accent on Architecture Awards
emony in Washington, D.C. Previous
iners of the Twenty-Five-Year Award
lude Frank Lloyd Wright's Taliesin West
l Eero Saarinen's Dulles International
port Terminal. *Nicolai Ouroussoff*









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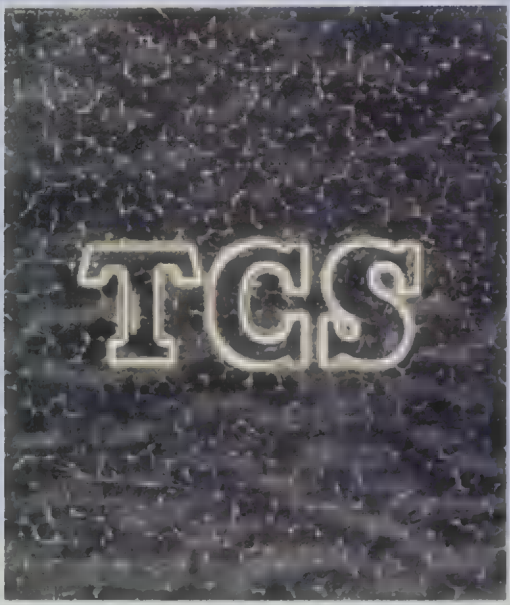

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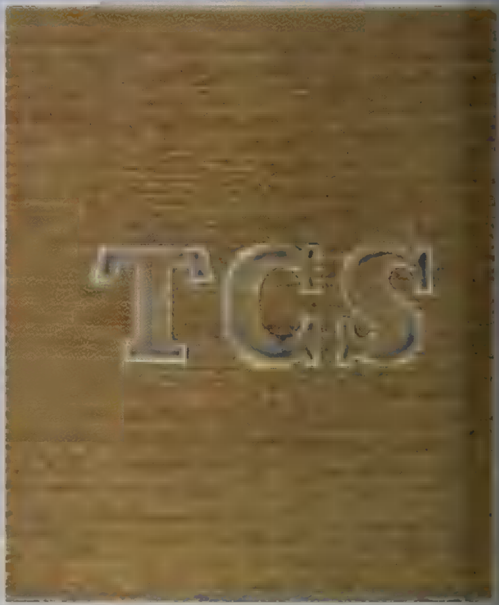

Hinsdale High School, Hinsdale, Illinois
Architects: Cone & Dornbusch

Pittsburgh International Airport
Architect: Tasso Katselas

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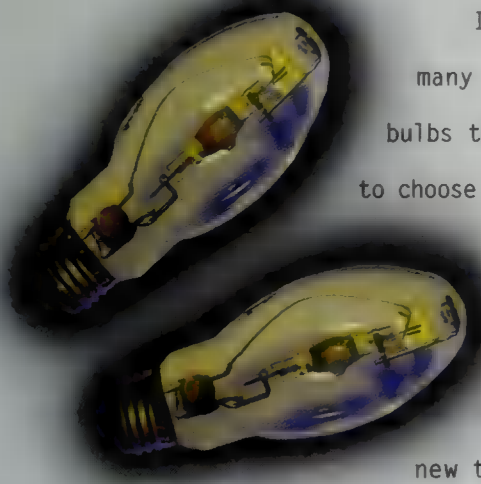

It's dizzying how many different light bulbs there are for you to choose from these days. An engineer could work full time just keeping up with all the new technologies.

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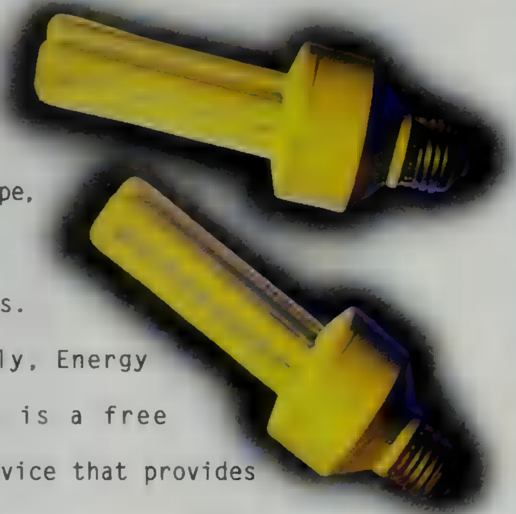

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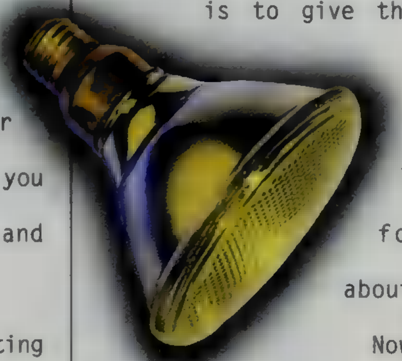

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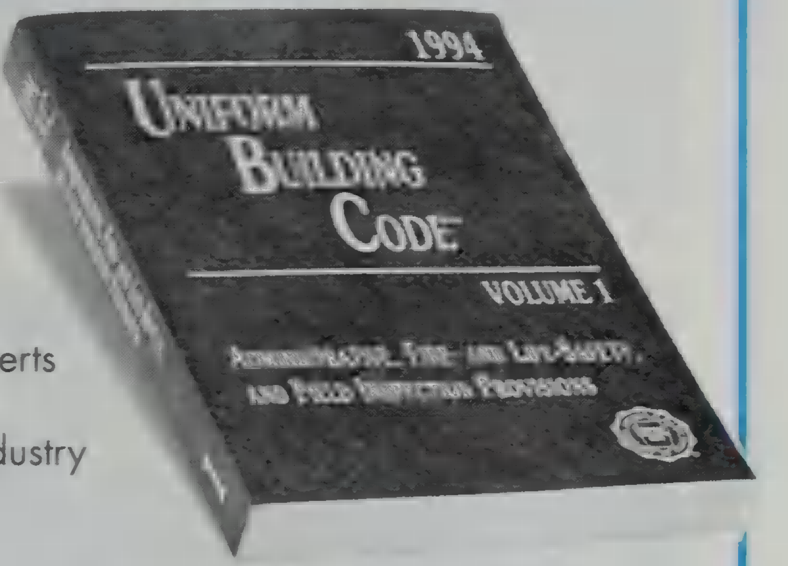

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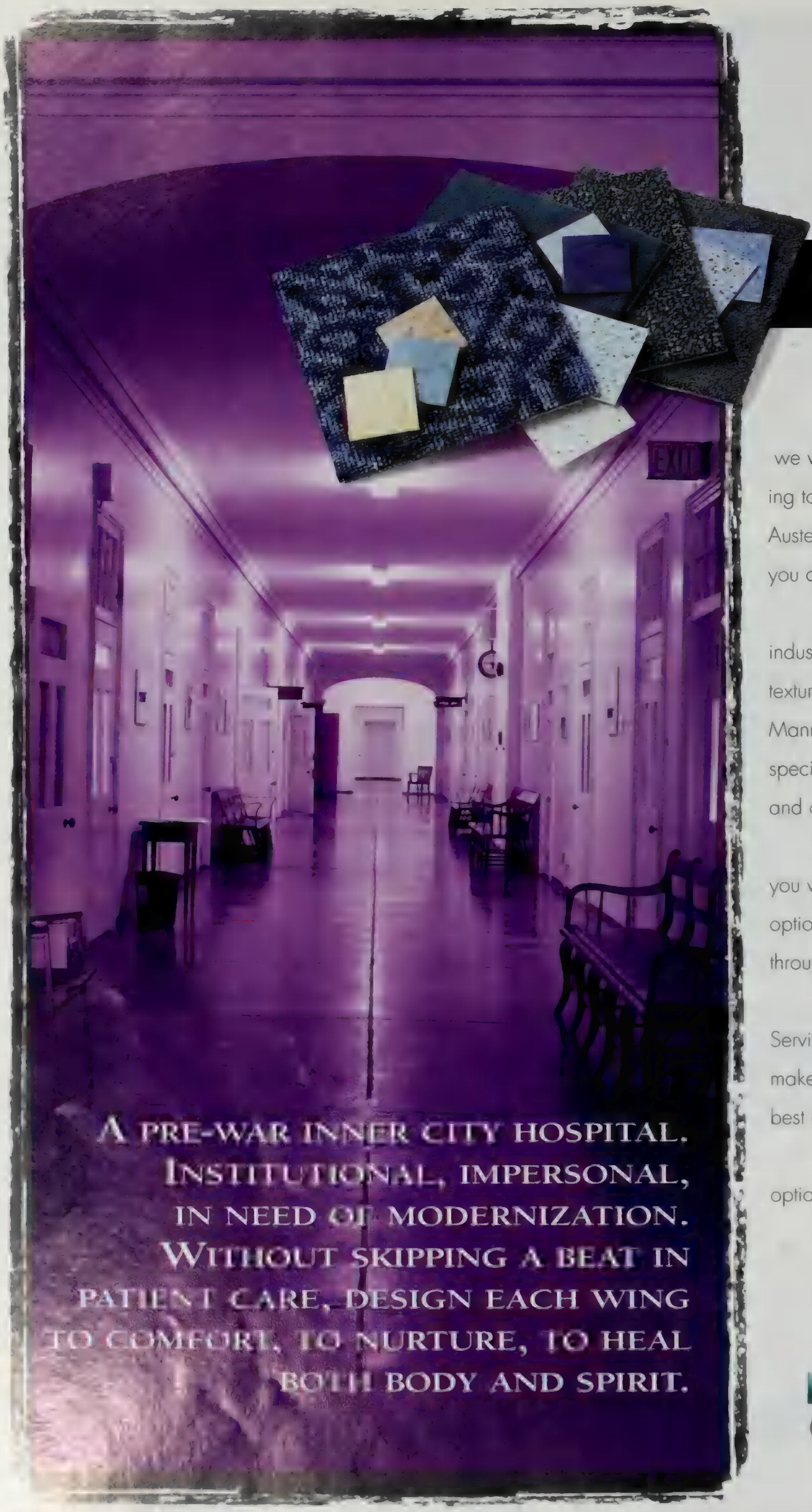
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ir Force Academy: Life and imes of an Icon

**odernism at Mid-Century: The Archi-
:ture of the United States Air Force
ademy,** *edited by Robert Bruegmann.
icago: University of Chicago Press, 1995,
) pages, $70.*

viewed by Jack Hartray

e size and symbolic importance of the Air
rce Academy in Colorado Springs almost
aranteed that the project would help define
architectural style of its time. *Mod-
uism at Mid-Century* reminds us of how
rt a time this was.

is book is almost too attractive. Its gener-
; format and graphic quality suggest a
fee-table publication, but the text is ■ sub-
ntial collection of thoughtful articles and
ebars. These can be read in any order, but
ntually we read them all, because the
tory of the Academy tells us so much
out who we were in the '50s.

emerged from the great war victorious
l fully employed. A generation of veterans
re granted entitlements to college degrees
l the easy credit needed for housing and
uipping new families. President Eisenhow-
may have expressed concern about the
itary-industrial complex, but to most of us
h seemed benign.

e imagery of the Academy's buildings, fur-
hings, and cadet uniforms expresses a
ar optimism that is now hard to remember.
turn the pages with the kind of shock we
erience in browsing through our high-
ool year books. In a thoughtful essay
essing the plan and design of the
ademy, Robert Bruegmann explains the
gins of its style and accounts for much of
at followed. His chapter is the central
anizing element of the book, but there are
den gems in the supporting essays as well.

discussion of landscape provides insight
the motives and methods of Dan Kiley,
haps the only American landscape archi-
t at that time who was prepared to work at

View of the Terrazzo Level of the Air Force Academy with the Cadet Quarters to the right and the Administration Building in the distance (below). The natural forms of the mountains provide a striking contrast to the grid of the buildings and the plaza.

© Hedrich-Blessing, courtesy of Chicago Historical Society

the scale of the Academy. There is also an interesting digression on Hollywood's involvement in fashioning the cadet uniforms.

The chapter on photography and the public exhibition of the initial design includes a discussion of the relation between architectural symbolism and national policy. It also explains the importance of presentation techniques when the client is a democracy with unpredictable Congressional representatives. Then as now, the Congress was capable of derailing any presentation. Its comedic talent seems to be one of the constants of our national history. The Congressional investigation of the Academy's subversive "International" design with its "ungodly" chapel turned into a national farce. SOM sailed through this tempest with few compromises, proving how good they were at managing big egos and unruly events.

They were probably also great architects. They created consensus where previously there had not even been a precedent. The SOM version of the International Style, which evolved from Lever House and the Air Force Academy, owed more to the graphic arts than to previous buildings or modern construction techniques—for the simple reason that this new architecture had never been built before.

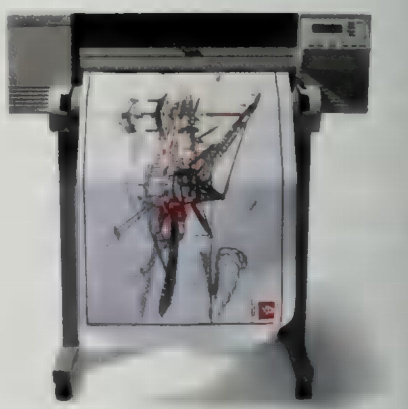
At the Air Force Academy, SOM built it. But those sleek, photogenic details were hard to figure out. The corner mullions of the clear-span dining hall, for example, had to accommodate over seven inches of movement in two directions while still looking thin. After it was designed, there was then the problem of getting it built. The construction industry did not share the revolutionary enthusiasms of the young designers. Neither did the group of old gentlemen who wrote the specifications. No aspect of the industry or profession was left unchallenged by this project.

The Cold War outlived Modernism. By the time the Soviet Union collapsed, the State Department was ensconced in Tory office interiors and our architectural avant-garde was laboring for Mickey Mouse's world empire. In retrospect, it seems that Modernism failed, but at least it was a failure of heroic proportions. Perhaps it should be judged by what was attempted.

Looking at the Academy in 1995 is refreshing. Like the Washington Monument and Lincoln Memorial, it projects a clear and constant sense of purpose. This may be inappropriate in our present historic predicament, but it might also indicate that it is time to resume the search for the truth that was hidden in Modernism. ■

*:k Hartray is a principal of Nagle,
rtray & Associates. As a junior designer
SOM in 1956, he worked briefly on the Air
rce Academy project.*

The Unplodder.



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Briefly Noted

e Architecture of Alienation: The litical Economy of Professional lucation, *by David Clarke. New unswick, N.J.: Transaction Publishers, 94, 191 pages, $33.*

viewed by Madlen Simon

chitecture is a profession gripped by an entity crisis. Is it an art, a craft, a science, a branch of philosophy or literature? The riety of venues for architectural education ints up this confusion. University, technical ool, art school, and atelier are variously ted as proper locations for the education training of architects.

The Architecture of Alienation, David arke, professor of advanced technical dies at the College of Technical Careers Southern Illinois University, builds a ong case for a liberal-arts education as a ndation for architectural studies.

e book is a David Clarke reader, a com- ndium of diverse short pieces joined by the thor's thesis that architectural education d practice will perish in isolation if not ked to culture.

e centerpiece of the book is a chapter enti- d "French Revolutions," which weaves an alysis of French architectural education oughout history into a fascinating narra- e. Clarke starts off with an essay on the ce and people, a flowing discourse showing h familiarity and love for French geogra- y and culture. As he traces the roots of ench architectural education in this civi- ation, he paints a sinister picture of a vernment suppressing the power of archi- ts by educating them in a cultural vacuum, side the universities, and in provincial iso- ion, out of communication with their peers other regions and disciplines. "Architec- e reflects civilization," says Clarke, "only he extent that architects are civilized."

"Investment vs. Consumption Spending," rke examines American architectural edu- ion from the perspective of value for money. Curricula at a sampling of private and public institutions across the country are analyzed to determine the value received by students and, by extension, society (the beneficiary or victim of architectural practice) as a result of tuition and tax dollars spent. The heavy emphasis on research methodology and the lengthy listings of barely processed data, however, render this chapter inaccessible to all but a small cadre of interested academics.

In the essays, letters, and book reviews included in this book, Clarke focuses his analytical powers and witty prose on a range of topics, including architectural criticism and commentary on current practice.

"Which client in the history of architecture," asks Clarke, "ever sued an architect for negligence regarding formal/theoretical positions? Why do architects, in a spasm of self-destruction, insist on attempting to make architecture more important than anyone except themselves want it to be?

"Because their self-importance is clearly against the general public's interest and desire, they have succeeded in achieving the opposite of their goal: irrelevance. The audience has largely gotten up and left." *The Architecture of Alienation* delivers a powerful plea for the reintegration of architecture with its culture.

Underpinning the text is the assumption that the culture of architecture is mainstream Western culture, a fairly prevalent notion as architectural education around the globe generally follows European models as exported by the British empire. At a time when multicultural diversity is being actively explored in universities and in the architectural profession, Clarke dismisses too hastily educational influences outside his own tradition. The value of contributions from other cultures is a difficult and touchy issue, but one which cannot be ignored in 1995.

dlen Simon is an assistant professor of hitecture at Kansas State University in nhattan, Kansas.

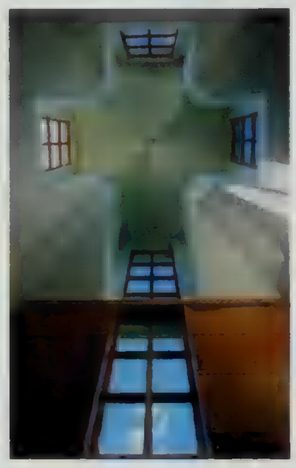
Modern House, *by John Welsh. London: Phaidon Press, 1994, 240 pages, $70.*
First published in England last year and now distributed in the U.S. by Chronicle Books, this book combines brains with good looks. Welsh, who shook up the *RIBA Journal* when he took over as editor a few years ago, provides thoughtful essays to each of the book's four chapters and a less successful introduction that tries to cover too much ground. Thirty houses from architects such as Meier, Foster, Predock, Ando, Gehry, Botta, and Koolhaas are organized into four groups—"the model villa," "structural solutions," "organic houses," and "urban compromises." Lots of color photographs and high production quality make this book worth its somewhat steep price tag.

Small Houses for the Next Century, *by Duo Dickinson. New York: McGraw-Hill, 1995, 268 pages, $40.*
The second edition of a 1986 book entitled *The Small House: An Artful Guide to Affordable Architectural Design*, this volume shows 35 different works by American architects such as William Turnbull, Shope Reno Wharton, and Tigerman McCurry. Divided into chapters based on size (number of bedrooms), the houses tend to be Postmodern in style and modest in budget. Practical information, including circulation-to-total-area ratio and cost per square foot, is provided for each house. This book is a good, nuts-and-bolts look at residential design. Too bad its own budget was kept so low that color photography is almost nonexistent.

The Temple in the House: Finding the Sacred in Everyday Architecture, *by Anthony Lawlor. New York: Putnam's, 1994, 240 pages, $18 (paper).*
Although the author often tumbles soul-first into the realm of the touchy-feely, this book offers an ecumenical look at how many different kinds of buildings express a sense of spirituality. Using examples from cultures around the world and quotes from sources as diverse as Anaïs Nin, Andrea Palladio, and Thomas Aquinas, the author covers a lot of territory. In the process, Lawlor—a practicing architect in Iowa—examines how siting, proportion, procession, light, and other key design elements affect the way people feel about buildings.

AN ENLIGHTENED ARCHITECT CALLS O
ROME AND ANDERSEN TO HELP A CHUR

As a student in Rome, architect Al Fitzpatrick studied the design of St. Peter's. "Daylight was used as a source of inspiration and tranquility," he said.



He wanted to bring that same light here to St. Joseph's – create a sanctuary in a hectic world. So he specified Andersen® windows. Said Fitzpatrick: "Andersen enabled us to use many sizes, configurations and special effects."

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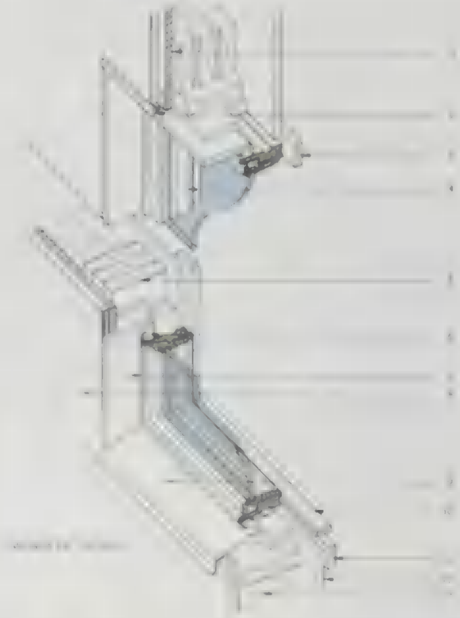

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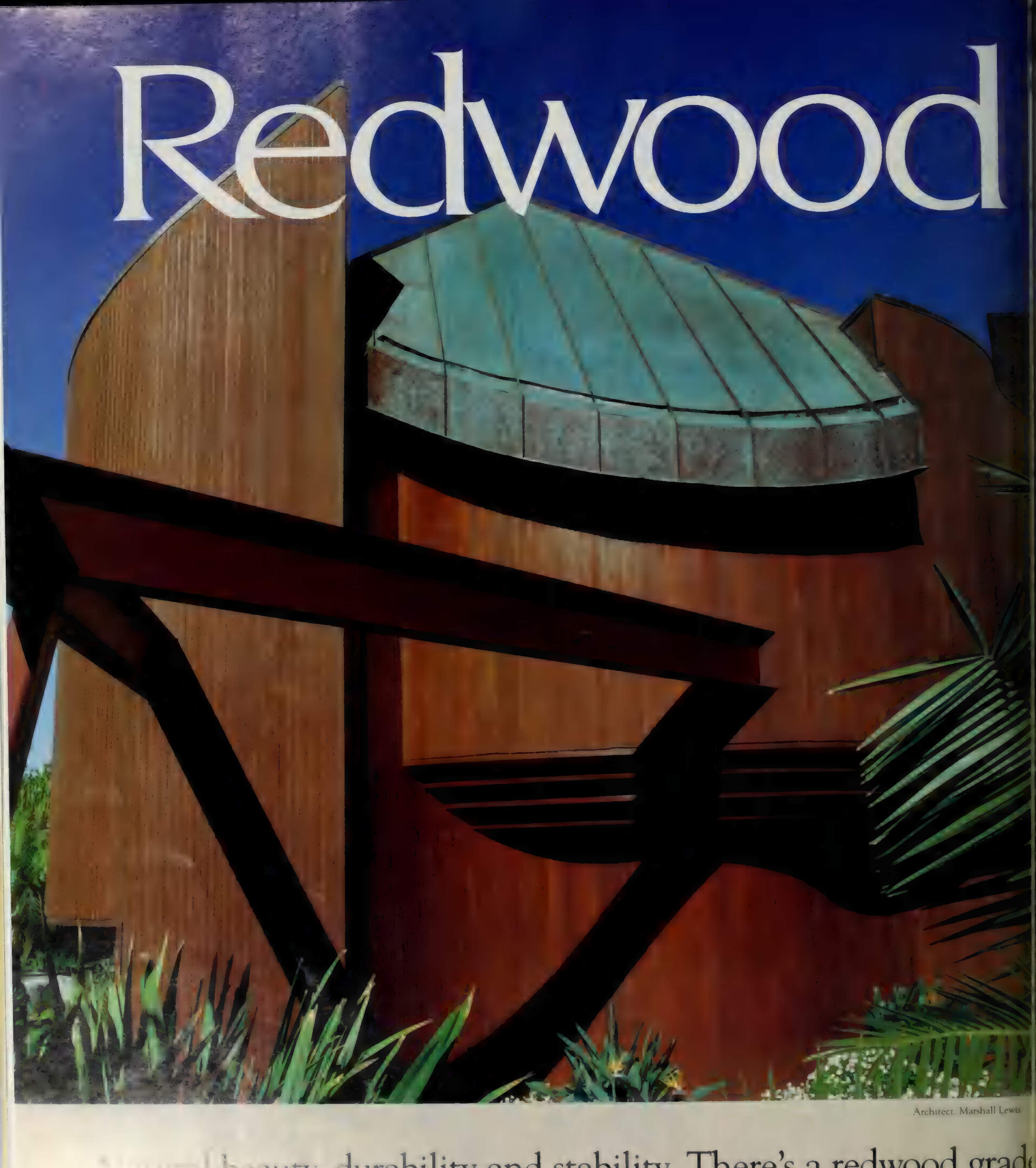

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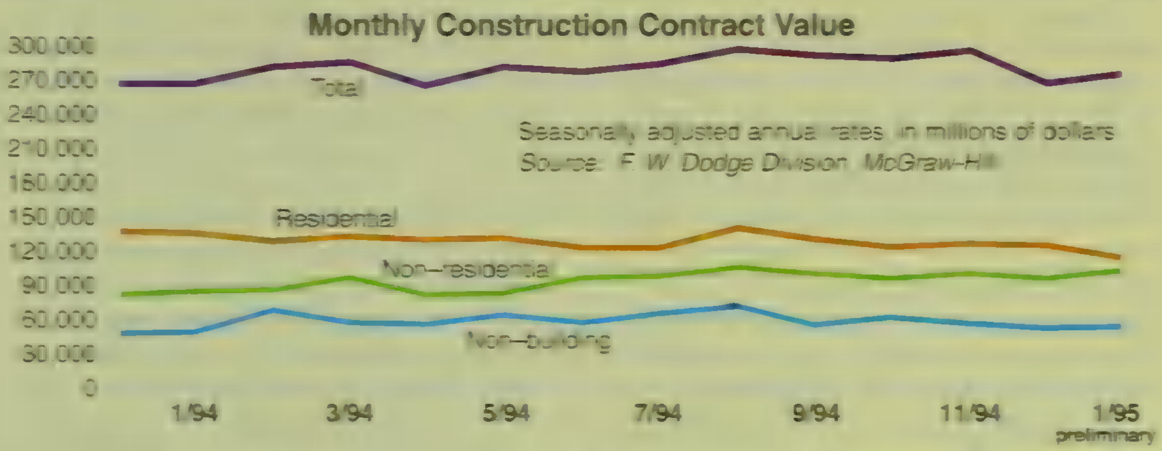
ndicators

xed signals

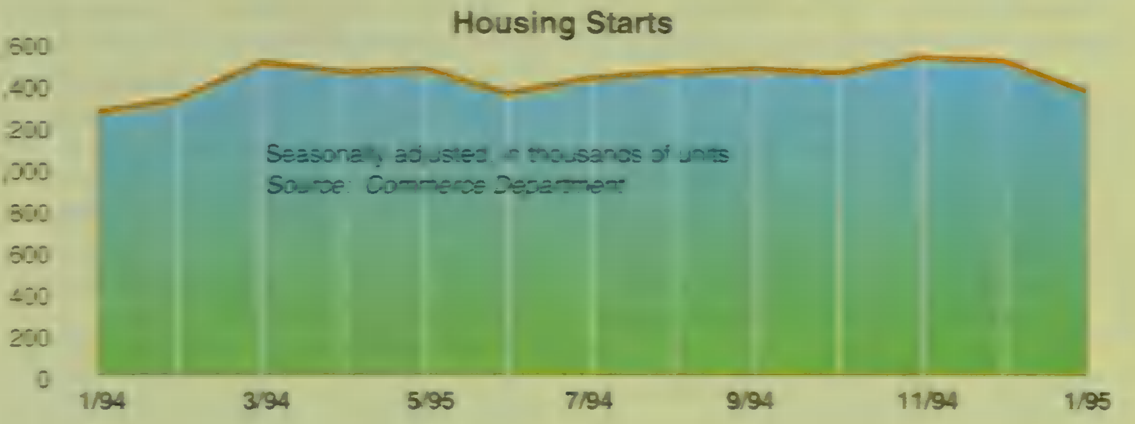
ly 1995 construction volume signals both xpected strengths and weaknesses. gle-family housing continues to slip, but as much as analysts predicted. Nonresitial building grew 8 percent over its ember level, but was only a tick higher n its last peak in August. Schools should ain an area of strength, says Dodge econst Robert A. Murray. Regionally, the th Atlantic and West posted the largest ps, with improvement in the South tral, the Midwest, and Northeast. ■


Monthly Construction Contract Value

Seasonally adjusted annual rates, in millions of dollars
Source: F. W. Dodge Division, McGraw-Hill

using continues to show strength . . .

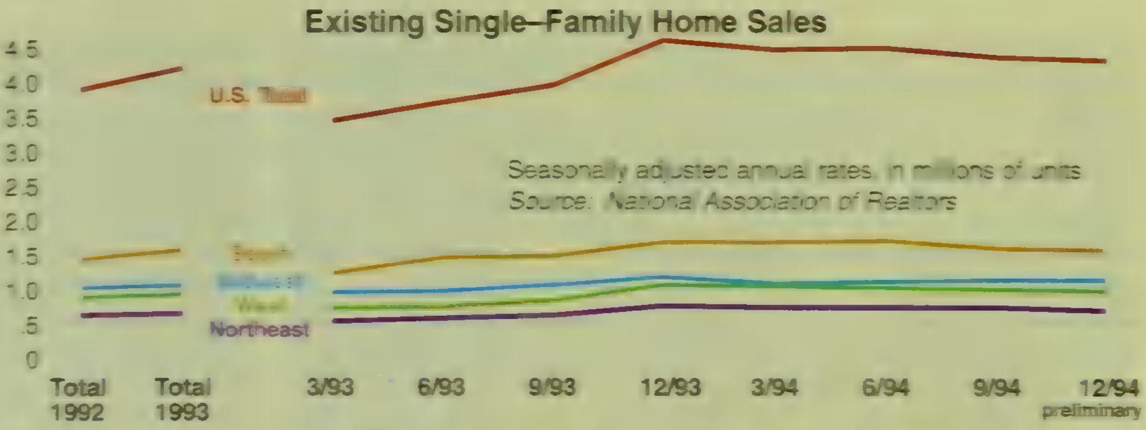
ugh volume is clearly slipping, many anas feared that housing would plunge idly, after interest rates rose sharply in 4. The rate spikes appear to have been nioned by slower house-price growth and availability of adjustable mortgages. ne analysts argue that builders have been optimistic, which may lead to steeper os in starts later. The optimists, however, be bailed out by lower rates, predicted later in 1995 on the assumption of dued overall economic growth. ■


Housing Starts

Seasonally adjusted, in thousands of units
Source: Commerce Department

. but is a bigger slump imminent?

es of existing homes (including apartnts) show a clear reaction to interest s. In many parts of the country consumer fidence remains high and unemployment s. Sales, however, have shown a steady t downward since mid-1994, especially in once-strong South. In the fourth quarter y the Midwest bucked the trend, posting a ht gain over the third quarter of 1994. All ions posted lower sales than during the ivalent period a year earlier, a decline of percent nationally. ■


Existing Single–Family Home Sales

Seasonally adjusted annual rates, in millions of units
Source: National Association of Realtors

ort Takes

- **What you think of us:** Here's a sampling of what readers who filled out postcard and bound-in surveys had to say: Coverage of completed projects and design news was rated very important (though predictably some found it too cutting-edge, others too tame), but readers strongly feel a need for more technical information, with practice-oriented stories (especially focusing on small firms) right behind. Some readers are proudly computer illiterate, others want more information on how computers impact practice (we've already added more stories on this subject). Many liked our coverage of problems at Denver International Airport. Some complained about the number of ads (Hey, they keep subscription costs down!); others applauded their usefulness. Thanks to those who responded: we're listening.
- **Partner and Mediate:** A survey by a task force on dispute resolution found partnering and mediation the most preferred methods of alternative dispute resolution.
- **Design/Build:** Practice Management Associates is launching *Design-Build Strategies*, a newsletter. Info: fax 617/965-5152. ■

Making Architecture Happen Outside Major Metro Areas

By Wendy Moonan

Although Peter Zumthor was happy to teach at Santa Monica's SCI-Arc in 1988 as a guest professor, the 52-year-old Swiss architect reportedly refuses to build outside his home region of Haldenstein because he feels the work wouldn't be appropriate anywhere else.

Few American architects share Zumthor's regionalist zeal, but many choose to work outside the usual big-city environs because they're committed to the unique qualities of a place. They appreciate the freedom, lifestyle, and connectedness of such a practice, even if it requires them to travel far afield for work and involves economic sacrifice.

Why they are where they are

For all but one of the 15 architects interviewed here, the challenges and opportunities of working outside the big cities seem to outweigh the disadvantages. A number of the nation's most talented architects do distinguished work in smaller cities and towns not known for supporting innovative architecture. Many of these architects made a conscious decision to locate where they are today—often places far from where they grew up.

Though Peter Bohlin co-founded Bohlin Cywinski Jackson in Wilkes-Barre, Pa., he was born in New York City. After graduating from Cranbrook Academy, Bohlin had job prospects in the offices of Eero Saarinen and Gunnar Birkerts, but chose this former coal-mining center in northeastern Pennsylvania, where his parents had moved and he had worked during the summer. "I was anxious to get at doing buildings, and I felt I could do it more quickly there," he says. Working on a tight budget, Bohlin built a house for his parents. The house was published in *The New York Times*, which convinced him to launch his own practice.

Over the years the firm added offices in Pittsburgh, Philadelphia, and Seattle. It's now at 60 people and last year won the AIA Architecture Firm Award. Bohlin leads a nomadic existence, traveling often to Seattle to oversee construction of the William Gates house [RECORD, November 1994, pages 84-87] with Bohlin alumnus James Cutler. Was Wilkes-Barre the right choice? "If I had to do it again, I would," he says, describing the view from his house in nearby Waverly: a panorama of the region's "endless mountains."

In spite of the practice's far-flung work, Wilkes-Barre is still home: "We are still doing work here, and we're tickled to do it." The firm just won a competition to design a federal courthouse in nearby Scranton, continues to do expansions and renovations for the Wyoming (Pa.) Seminary, has a regional history center for Western Pennsylvania under construction, and is busy advising Wilkes-Barre on an Army Corps of Engineers plan to raise the town dikes. "I've always liked the idea of being out of the mainstream, in terms of where we lived, and yet being visible," Bohlin explains. "There's less static. In a way it may be easier to be insightful if you are a bit removed from New York City. There's more pleasure in not following the current, most stylish thoughts."

Wendy Moonan, based in New York City, writes on architecture and design.

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Growing with Aspen: *The increasing affluence of Aspen, Colo., has permitted Harry Teague a much wider choice of commissions than the town's small year-round population would suggest. Though Teague* [illegible] *Harris Concert Hall, an acoustically sophisticated auditorium seating 500 (2, 3). Teague has also done extensive work at the Anderson Ranch, a summer school for artists in nearby Snowmass.*

ough architecture has been thought the quintessential urban ofession, some of the best work has always come out of smaller, even ral places. Small-town architects describe both the special rewards d the special sacrifices of the practices they've chosen.

en, Colo.-based architect Harry Teague is originally from the New York City area oine, N.J.). "My move West had to do with personality and escaping the East and a scribed path that was meant to happen r graduate school," says Teague, who w Aspen from his years as a ski racer at rtmouth. He went to Colorado after grad- ng from Yale Architecture School in 1972, he height of the counterculture move- nt. "I wanted to change things; I wanted uild. For me, it was the opportunity."

was not easy. Aspen hadn't yet become millionaire's playground it is today. "We ped out the first year. For seven years I t everything I designed. We were willing ive modestly, and we still live primitively. crificed in order to do the work; I almost e away my services." But he found that nts were less conservative and he could serious architecture."

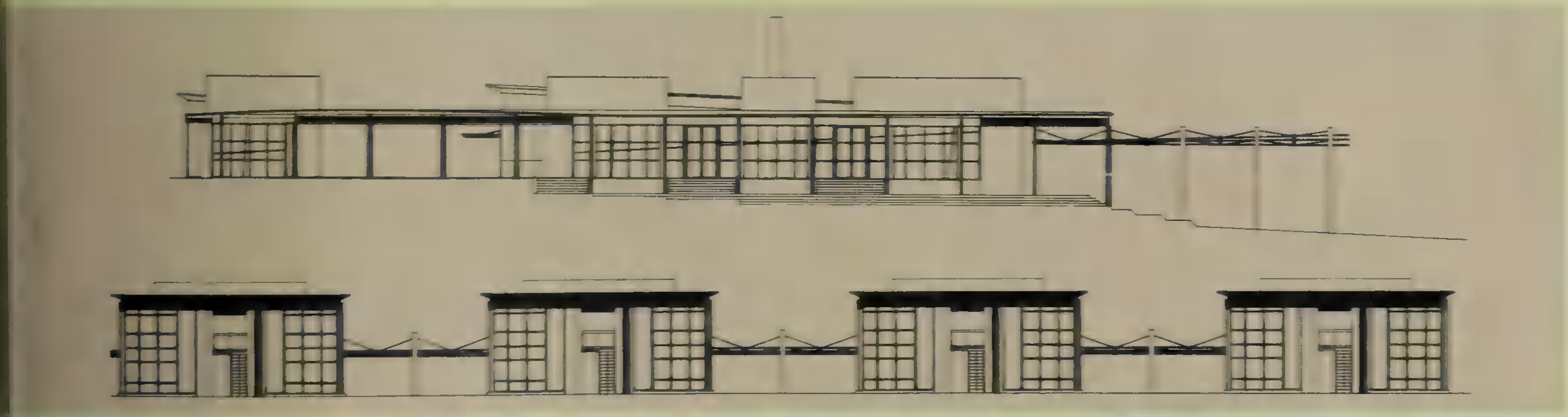
ay, Teague has a staff of 12, with eight itects, and his workload is diverse. ent commissions include the Joan and ng Harris Concert Hall (for the Aspen summer music festival—opposite), the Hotel Lenado, the Aspen Center for Physics, a chapel in nearby Snowmass, an art park, a science center for children, and commercial interiors for Esprit and Steuben. He also works outside the region: there's a zoo for the Millbrook School in New York State, and a large house in Pennsylvania. "In a small town, you can have an impact," Teague says. "The best of all worlds is being able to have that connection with your community."

Coming home on your own terms

Ray Huff, an architect who calls his work "Modernist but traditional," tried to leave his home town of Charleston, S.C., but couldn't stay away. "I went to New York, D.C., and San Francisco. Being a native, I knew people. And the South is very loyal. But it's also very peculiar. I committed to come back to Charleston on my own terms. I came back as a new thinker in a place where old thinking prevails."

Huff opened his own office in 1980 and now has six architects on staff. He is currently doing work for both South Carolina State and a university in North Carolina, is part of a team devising a reuse plan for a former Navy facility, and has completed a conference center (below). He is designing a Charleston fire station, a church, and some houses. In March he opened a second office in Columbia, S.C. "The South is hidden, mysterious, idiosyncratic and traditional," Huff explains. "Oddness is permitted, but not outspokenness. If you stray from the norm, you are looked on with suspicion. It's not very accepting. You have to let the South infuse you. It grows on you. I try to transform the quality of the place into architecture."

W. G. Clark, with his partner Charles Menefee, III, found Charleston less congenial, even after designing some widely admired small projects and an aquarium that has yet to be built. After years in Charleston, and before that, in Philadelphia (with Robert Venturi and Denise Scott Brown), Clark, with Menefee, moved the firm to Clark's native Charlottesville, Va., in 1992. Both partners also teach at the University of Virginia. "It's extremely important for a young architect to associate with a place, to know a place very



Modern Traditionalist: *Ray Huff can be considered an iconoclast: a Modernist in history-drenched Charleston, S.C. While clients may be attuned to columns and porches, Huff brings traditional social and environmental gentility to buildings using contemporary means. A case in point is this conference center for the 1890 Program at South Carolina State University (public areas, top elevation). He strings sleeping rooms (← and above) through a forest, linked by a suspended metal canopy. Huff uses heavy masonry walls (for thermal lag), overhangs (to control light), and screened rooms (for ventilation), yet the materials are contemporary and each element is detailed to reflect a Modernist concern with "how it's made."*

A small town can be good for raising children, but difficult to practice architecture in. "Some people here hate what we do," says Dan Rockhill. "We were practically tarred and feathered for one building."

well, so you can respond to it intelligently and begin to build a reputation for doing thoughtful work," Clark explains. "What we are interested in is a response to a particular, localized place—not to do work that recalls that place. For years, it seemed that every good architect in the country was associated with a city. But with communications today, it's no longer a necessity."

Rewards and pitfalls

And what kind of work can these firms get? Most architects working outside major metro areas design a lot of houses, but many of those interviewed said they try not to specialize, even when it means losing commissions.

"Specialization is something an architect never really wants to do," says Turner Brooks, a Burlington, Vt., architect who is currently teaching at Yale. [See page 92 for a recent Brooks house.] "You don't want to limit yourself." On the other hand, it can be hard to put out that word. As Brooks says, "I don't want to be typed as a clapboardy, farmhouse type." He thinks he'll be forced to open a second office in New Haven or New York City, not only in the hope that he'll receive more varied commissions, but for survival. Peter Bohlin recalls, "At the beginning we turned down a house or two because we didn't want to get typecast; we thought we couldn't survive if that was all we did."

In Oklahoma City, Rand Elliott says that diversifying his workload has come naturally. "I created a reputation by doing small projects most architects won't do," says Elliott, who now has a staff of 12, including eight architects. "In a smaller market, I can't specialize. And I don't want to." Since starting his own firm at age 26 in 1976, Elliott says he has done some 500 projects, including banks, law firms, retail spaces, stone farmhouses, a Miesian glass house, a gateway for the Will Rogers World Airport, and the Route 66 National Museum.

"I like dealing with the guy in charge, not bureaucrats. For me, personal chemistry is everything." He describes a recent project done for a minister who directs an international self-help organization called World Neighbors. Working on a very tight budget with off-the-shelf materials, Elliott patterned the 11,000-square-foot interior after a small African village, with distinct areas set aside for team conferences, computer work, and "gatherings (below)." Elliott explains, "It was our challenge to tell the story of World Neighbors in architectural form," he says. The building won an AIA Interior Architecture award.

In Lawrence, Kan., Dan Rockhill is struggling to keep his practice diversified. "We like to do different kinds of projects because it's more challenging," he says. A native of New York City, Rockhill came to teach architecture at the University of Kansas in 1980 and stayed. He finds it affordable and a good environment to raise three children, but a difficult place in which to practice architecture. Most of his work is residential (half of it is historic preservation), but he says he wants to design "restaurants, museums—buildings that have more usage and design exposure than houses."

His problem is finding the clients to do it. "I find Midwesterners are largely more conser-

© Hedrich-Blessing photos

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Prairie Individualist: *Rand Elliott prides himself on unique responses to clients. The James Morris Building is a linear office building with only one layer of [illegible] private offices on each side of a [illegible] central corridor [illegible] on the northern side (5, 7) [illegible] winds. The south [illegible] Elliott built a [illegible] for World Neighbors [illegible] to eliminate*

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tive and more hesitant to embrace design," says. "Some people here hate what we do. were practically tarred and feathered for e building." Typical of Rockhill's work is own just-completed house in the middle of istoric neighborhood on a street lined with dest bungalows. Sheathed in hand-trow- d, unpainted stucco, the tall, narrow, o-story building is roofed in recycled cor- gated aluminum. An outdoor stair is made steel grating, a balcony is fronted with lustrial grillwork, and steel angles frame ors and windows (below). It's pretty uncon- ntional for Kansas.

1988, Rockhill opened a design/build firm, ckhill and Associates. "We're trying to do ngs speculatively because clients are uctant to take on things they can't look " he says. "We build unusual houses and to sell them." Buyers, he says, tend to be ople who have moved here from San Fran- co or New York." Rockhill and his team of r build all their buildings "so it looks like been made by somebody. We do our own ucco. We form our own concrete. We do all welding. It takes us a long time, but it gives us the opportunity to do anything we want." They also incorporate a lot of recycled materials into the work: screens from old freight elevators, pipes from the Kansas oilfields, salvaged bricks, plow disks, old counter tops, you name it.

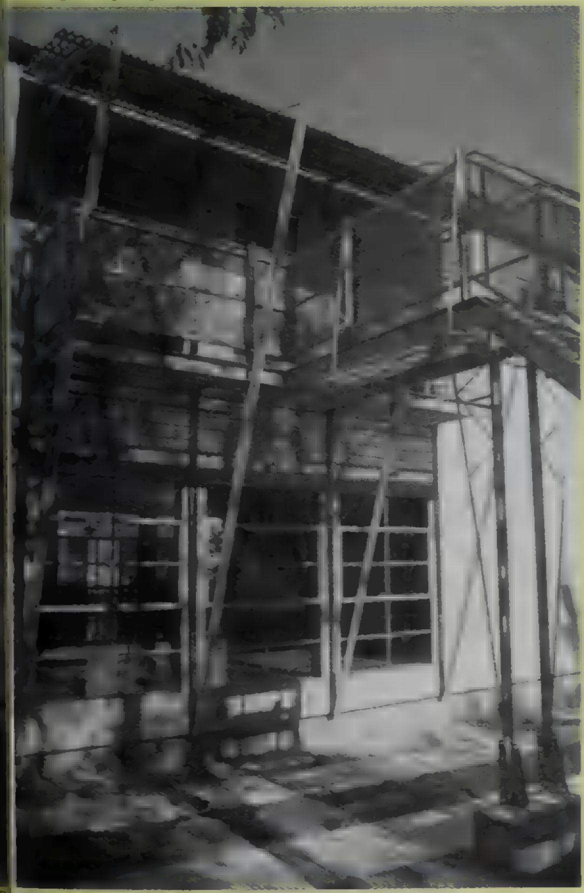
Survival skills

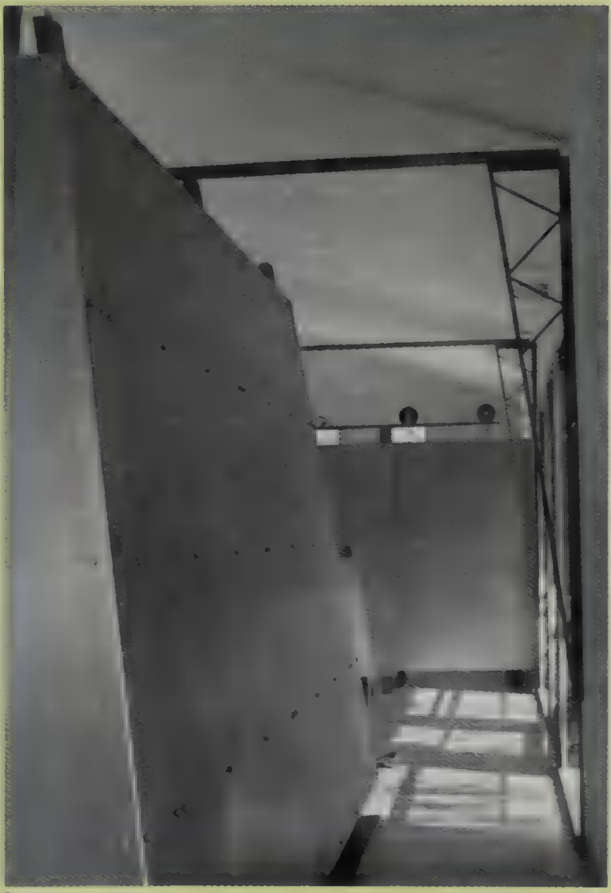
Rockhill is one of several architects who still teach to bring in some revenue. Outside income becomes even more important when work is scarce, as it is for Mockbee/Coker Architects of Memphis, Tenn., and Greensboro, Ala. (for the moment). "Clients for contemporary architecture in the deep South are few and far between," says L. Coleman Coker, who teaches at Memphis College of the Arts. Samuel Mockbee is teaching at Harvard this semester. The firm is about to start construction on a house on the Tennessee River, and has done an addition to a Greek Revival shotgun known as the Wohner House in Canton, Miss. (where the firm's offices once were), but there could be more work. "We've both lived here all of our lives," says Coker. "It's never been an option to leave the South; we both love what the South offers us as architects." Nevertheless, Coker is a sculptor and Mockbee is a painter, so not all their creative output requires a client.

Like Mockbee/Coker, W. G. Clark and Charles Menefee have little work; both teach at the University of Virginia, where Clark has been chairman of the Architecture Department since 1988. The firm used to enter a lot of competitions, and it has won several awards, but the practice is currently suffering. "We get several calls a year from people who have seen the Croffead House," says Clark, referring to an award-winning concrete and glass house built in 1989 in Charleston [RECORD, mid-April 1990, pages 42-47]. "One by one, the projects seem to fade away ."

Like a lack of clients, a poor economy can also dictate what kind of work is available. In Worcester, Mass., a city still suffering from the recession, architect Edward Healy, principal designer in a four-person firm called TASC, Inc., is grateful he has any work. "It's the worst period we've ever been in," he says, after more than 25 years in practice. "I'm

li Yapicioglu photos

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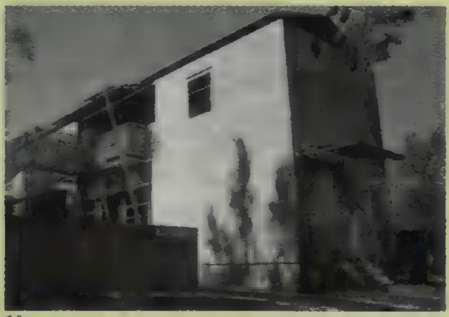

10

Wizard of welded steel: *Dan Rockhill does not always endear himself to neighbors when he shingles a 19th-century farmhouse in tin-clad diamonds, or slips copper sheets over a ranch-house addition. The sensibility visible in his own house (8, 10) might also be a little advanced for his college-town neighbors in Lawrence, Kansas, even though many of the elements are literally recycled from the agri-industrial context of the surrounding countryside. The interior (9) is loftlike, with a service core in the middle.*

"We have to market our bums off," says partner Sarah Susanka of Susanka, Mulfinger & Mahady. "But it's a myth you can't make a living doing houses."

doing whatever comes in through the door." What has saved him is that he also acts as a construction manager-advisor to the owner. "We do very simple, cost-effective buildings." Because of the additional risk, though, "we're denied cost-effective liability insurance," he says. "We go bare."

Healy can build a church for $33 per sq ft, and he now has seven in various stages of construction. He calls them the "new New England Churches." They are like "the simple 17th-century churches built by farmers with their own hands." He says this is not the first time he has gotten church commissions when the economy was poor. What limits him is not only the bad economy but his firm's small size. "When a decent-size project comes along, it goes down the road to Cambridge or Boston," he says.

Some succeed by specializing

While most firms don't like to specialize, some of the most successful firms prefer to. Connie McFarland, a native of Oklahoma who opened her own firm in Tulsa in 1988, says her niche is designing health-care facilities in rural settings, although she also does office buildings, laboratories, and residences, including Tulsa's Ronald McDonald House. "For nine years, I'd been with another firm, as vice-president in charge of health-care work," she says. "They said there wasn't enough money in the field."

So she left to go out on her own, and now has a staff of nine, including four architects. "I really want to help; I want to make buildings that help people get well," McFarland says. "We're never going to make a lot of money but our clients send us home with a piece of pie." To date, she has worked on two long-term care facilities, three health-care clinics, and 10 acute-care facilities around the state and in Texas. She's also built an expansion of a local television station, and the state headquarters for the Oklahoma Special Olympics. "We get the projects with a heart," she says. But budgets are small and programs are functional. "You don't win design awards."

E. Fay Jones, in Fayetteville, Ark., says he has "aspired to stay small." Ever since 1953, when Jones returned to his home state to join the University of Arkansas faculty and opened his firm, he has found work. "I've been fortunate to stay busy," he says modestly. But 25 years ago, when his office had grown to 12 people, he was unhappy. "I was becoming an administrator trying to keep up with everything," he recalls. He didn't fire anyone, but after a couple of years natural attrition brought the firm size down.

"I found six people seemed to be optimum for working conditions," Jones says. "It means I have to decline larger projects that come along from time to time." Nonetheless, the 1990 AIA Gold Medal winner has commissions all over the country, including chapels in both Kansas City and Whittier, Calif., houses in Massachusetts, Missouri, and Illinois; and a summer camp in Mississippi. Similarly, Harry Teague in Aspen says he would like to do more regional and national work, but, "Our idea is not to get bigger in terms of numbers and personnel."

Selling it

Most of the architects interviewed, including Turner Brooks, Harry Teague, W. G. Clark,

11

Art and architecture: *Coleman Coker and Sam Mockbee have moved to the rural South although it's sometimes an uncongenial environment for building. Even with teaching and work like the House on the Tennessee River (11), and the Walker House (12), there's still time to explore ideas through painting and sculpture. The construction (13) is by Coker.*

12

© Bruce O'Hare

13

Coleman Coker, and Fay Jones, said they never look for new business; they wait for it to come to them. Others embrace marketing. Oklahoma architect Rand Elliott's approach is fairly typical of the pro-marketing group. "We're very active in the community, and we've gotten business because of it," he says. He has been president of the local ballet and is a member of the Rotary Club.

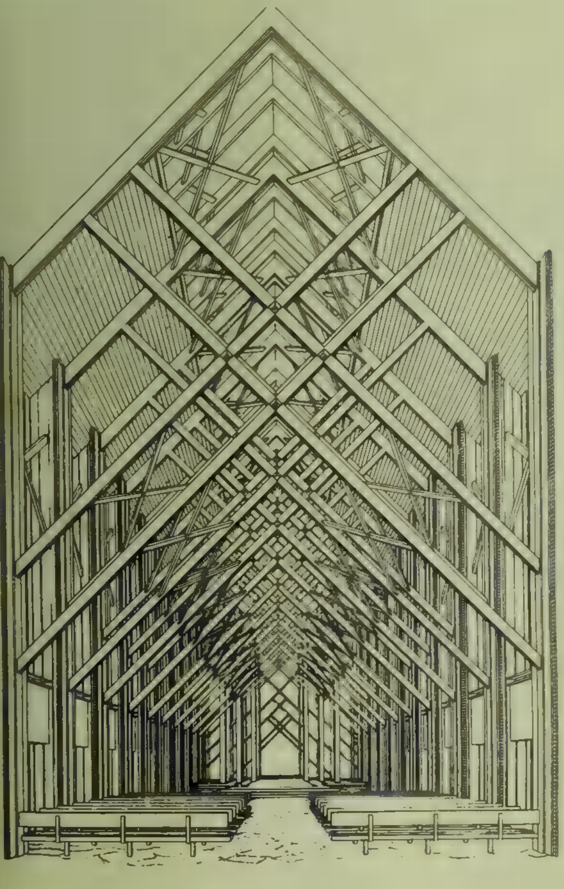
He also has a full-time marketing person on staff, who has placed his projects in local publications, national newspapers, and design magazines in England, Japan, and Australia. He has won AIA awards, and last February, received an award from *Interiors* magazine. He wants the firm to grow, and he is succeeding in doing more national work. He recently built a contemporary glass house in Connecticut and is designing a rural credit union for a bank in Virginia.

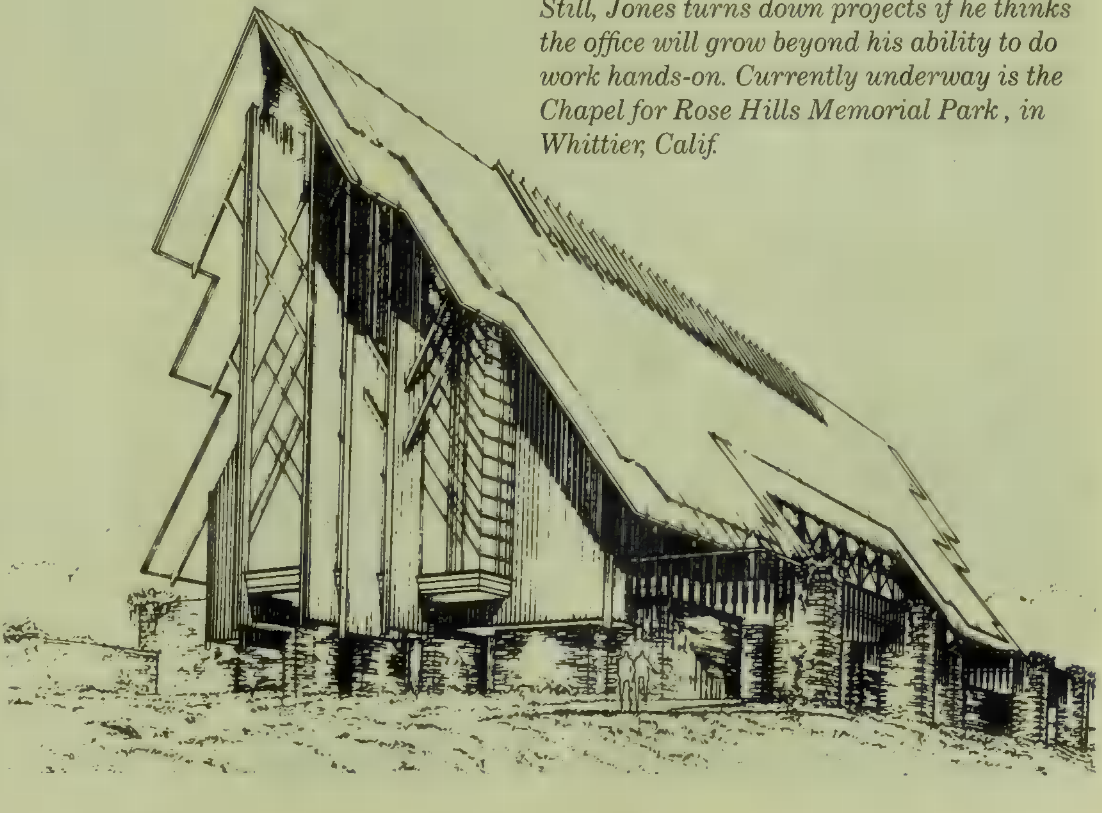
Although Susanka, Mulfinger & Mahady is based in a big city, Minneapolis, the firm focuses on residential work, much of it for clients in rural areas. Sarah Susanka, a native of Kent, England, who co-founded the firm in 1983, a few years after graduating from the University of Oregon architecture school, says the firm markets its residential work aggressively because the partners need to let middle-class people know they can afford architect-designed houses. "We have to market our bums off," says Susanka. "But it's a myth you can't make a living doing houses."

The firm received many calls, for example, after it was featured last fall on an eight-part PBS television series on contracting to build your own house. (The producers had read an article on Susanka, Mulfinger & Mahady.) Both Sarah Susanka and staff architect Robert Gerloff frequently write articles, and Dale Mulfinger and Susanka lecture at the local home and garden show twice a year. Last year, the firm built a house on spec for a home-building show, and the work of the firm is regularly covered in the *Utne Reader, Home, Better Homes and Gardens' Building Ideas,* and *Midwest Home & Design,* all of which attracts new clients. The firm has devised an innovative three-tier fee system for the middle-income client. Most of its houses cost between $150,000 and $500,000. For a 9-percent fee, the firm will give a contractor a set of working drawings. For 15 percent, it will supervise the entire construction. And for 4 percent, the architects will do schematic drawings that must be completed by a draftsperson. Clients can also select an hourly rate option to meet with the architects for discussion.

Firms in smaller cities are very specific about what they offer: time, trust, and effort.
- Time: "We're really quite slow," confesses Ray Huff. "We spend a great deal of time developing trust with the client. Once that's established, we can work toward some serious ambitions."
- Trust. "When dollars are attached to dreams, it's always a difficult time," says Sarah Susanka. "I tell clients, I'm going to hang in there with them and see it through."
- Effort. "To be a good architect today, you pretty much devote your life to the effort," says Coleman Coker. "We've come to this by choice."

Typically, they fail to mention their most important attribute: talent. ■





Staying small: *Fay Jones + Maurice Jennings' neo-Gothic open-air chapels have caught the imagination of clients nationwide. Still, Jones turns down projects if he thinks the office will grow beyond his ability to do work hands-on. Currently underway is the Chapel for Rose Hills Memorial Park, in Whittier, Calif.*

ADA: Barrier-Free It Isn't

By Katherine Kai-sun Chia

Among regulations affecting the building industry, the 1992 Americans With Disabilities Act (ADA) is unique because it was enacted as a civil rights law. While architects and owners alike would prefer the certainty of a fixed set of regulations, this is not the way ADA works. In a political climate that questions some basic assumptions about the role of regulations, is ADA's open-endedness a blessing or a curse?

According to Liz Savage of the Civil Rights Division at the Department of Justice, "The ADA was never intended as a building code." Instead it provides a set of guidelines for architects, officials, and owners. ACCESS, a federal advisory committee that studies the impact of ADA, provides a set of national recommendations known as ADA Access Guidelines (ADAAG). Kim Beasley, chair of ACCESS and managing principal of Paradigm Design Group, a consultant specializing in disabled issues, says that ACCESS is continuously comparing the ADAAG standards with ANSI A117.1—the standard referenced by codes prior to ADA—and revising them.

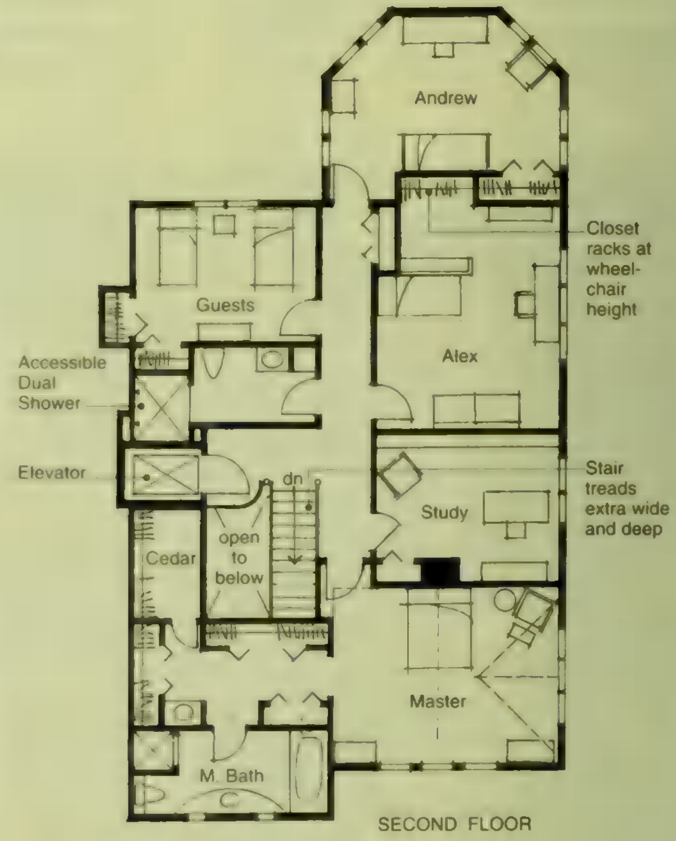
Katherine Kai-sun Chia practices in New York City and writes on architecture.

Conflicts in local codes and enforcement

ADAAG standards are, however, recommendations. Local code officials don't enforce ADA. Enforcement only occurs at the federal level, through complaints filed by aggrieved parties. "The ADA is an absolute nightmare because there's so much interpretation, and it lays the profession open to all kinds of liability," says Architect Richard Hardaway. "In the case of Massachusetts, the specifics of the ADA may conflict with strictly enforced state codes. Architects usually follow the state code and hope that there are no problems with the federal laws." Jim Mahoney, of PDE Associates, in Boston, found that when he showed an accessible toilet room called for by ADA, but not by the state code, he was required by the state inspector to size the room according to state code, which is nearly twice the area of the room called for under ADA. "Could we please come up with one and only one code?" he pleads.

States can apply to have their building code reviewed by the Department of Justice for a certificate of ADA compliance which, in turn, gives building inspectors the de facto responsibility of enforcing federal accessibility guidelines via local codes. However, the recent certification of Washington state took three years and approvals for Texas, Utah, New Mexico, and Florida are still pending. Other states, such as Virginia, simply adopted the ADA as their code, verbatim. The Justice Department can only enforce

© John Horner [illegible]



Enabling a child: *To anticipate the needs of a client's child that has cerebral palsy, Hardaway Associates designed wide hallways and doors and extra deep steps (left) in this Chestnut Hill, Mass., house. The child's bedroom (plan) includes wheelchair-accessible clothes hangers and low window sills.*

he Americans With Disabilities Act relies on good-faith effort ver carved-in-stone rules. The result, however, has been to make nterpretation of disabled requirements far more complex.

ompliance and does not have the authority
take away a practitioner's license, nor can
enforce private claims of blame and com-
ensation (who will fix the problem and pay
r it).

ith 1,300 active investigations, the
epartment is currently backlogged with
omplaints, each one requiring compliance
eview. Two thirds of the complaints being
led with the Justice Department deal with
arriers in existing structures, and there
re several individual complaints against
rchitects claiming a consistent failure to
omply. A "wait and see" attitude may not
eet Justice's test of a "good faith" effort.
ecently 100 Lone Star Steakhouse and
aloon restaurants were deemed to lack suffi-
ent accessible parking, sufficient accessible
eating and bathrooms, and adequate ramps.
one Star settled by agreeing to make the
estaurants fully accessible within 45 days
and complying with standards in the future. It donated $25,000 to non-profit disability groups.

Don't overstep professional bounds

Jim Mintzer, Associate Advocate for the Eastern Paralyzed Veterans' Association, who has filed numerous complaints on behalf of disabled citizens, said that the ADA is enforced by pressure as much as by resort to legal action. Recently, he was notified by a citizen that the design of a new two-story-high Duchess County, N.Y., town hall did not include an elevator. ADA requires an elevator for buildings higher than one story, but state law only requires one for public buildings over three stories. Rather than file a formal complaint, Mintzer immediately contacted the architect to have the design revised, which not only is courteous, but expeditious. "Once the building has been built, you have to file a complaint at the Department of Justice level under Title II or a lawsuit in federal district court," says Mintzer, a laborious process.

Alan Eisenberg, vice president of the federal legislative affairs department at the AIA, advises that it is easy to inadvertently overstep the boundaries of professional responsibility, especially in terms of existing buildings. "There is a distinction between questions of how to remove or add something, which is the architect's realm, versus how many and under what circumstances, which is often decided by the owner and based on economic and legal issues." This is the case because corrections may not be required when they pose an "undue burden"—a judgment the owner, not the architect, must make. On the other hand, the architect can assist in determining those actions that are "readily achievable" under the Act or that may not be required because their cost is

Continued on page 113

andmark ramps up: *James
leg Kruhly developed discreet
lutions to improve access to
vo structures within a land-
ark complex in Wilmington,
el. A finely proportioned
andrail protects a ramp at The
irst and Central Presbyterian
hurch's Education building
ithout disguising its front
bove). Balustrades on the roof
nceal a new elevator hoistway.*

To avoid placing an unsightly ramp at the front of the church's main sanctuary (right), Kruhly designed a brick-paved ramp-cum-garden that begins to the left of the main steps and delivers celebrants to the vestibule through a side door (top right).

AutoCAD Add-Ons: Specialized vs. Do-Everything

By Steven S. Ross

It is little wonder that the world of add-on software for high-end CAD packages such as AutoCAD is so confusing for architects. There are more than 2,000 vendors and probably more than 4,000 separate add-ons for AutoCAD alone. It helps, however, to categorize add-ons not only by function, but also by scope. That's because sales demos for add-ons often concentrate on handling a few complex tasks in a flashy way, while hiding the true reach of a package.

Auto-Architect from Softdesk, for instance, is one of a select group of "comprehensive" add-on packages. You can draw with Auto-Architect, of course. But you can also adapt your drawing to be only one part of a database that can encompass your entire project.

Don' t need a scope that wide? Drafting aids such as Eagle Point Advanced Architecture may fill the bill. You will be able to add more intelligence to your drawing later, and you get the drawing done on time.

Need something special? Most add-ons do just that—they help you add ductwork, plumbing, perhaps electrical service or wall details. Facade falls into that category—you use it to draw 3D models quickly. In fact, you can pull together exterior walls, with roofs and dormers, in just a few minutes if they are straightforward—brick and stick single-family homes, or boxy apartment buildings, or simple office blocks.

A good special-purpose add-on for more generic drafting won't preclude your using a comprehensive package on the project's drawings later. And of course, the functionality of these packages often overlaps. All three of the ones we mention here, for instance, can set up and draw a complicated stairway or complex roofline, for example.

This month, we look at Auto-Architect 7.0 from Softdesk, the first release since Softdesk [illegible] competitor ASG, and the first [illegible] AutoCAD 13 was released. We also [illegible] from Eclipse, a delightful [illegible] that we've been [illegible]. We didn't have room [illegible]

Auto-Architect and Core 7.0

Vendor: Softdesk, Inc., 7 Liberty Hill Rd., Henniker, NH 03242. 603/428-3199; fax 603/428-7901. Call 603/428-3191 for list of resellers.

Price: Core is $400; Auto-Architect $1,000. There's also an Architectural professional bundle that includes Softdesk Productivity Tools (data link, estimating, database query) for $1,750 total. Upgrades from the last versions of ASG or Softdesk cost $150 per module; previous ASG customers get Productivity Tools free; Softdesk customers get Core free. Most support is provided by local resellers; in addition, Softdesk offers a $600 support plan, five hours over 12 months, or a 12-month software upgrade and tech-support plan for 20 percent of product price. There's no additional charge for switching between Windows and DOS.

Equipment required: Computer capable of running AutoCAD 12.2 or later (we used AutoCAD 13 for DOS). A Pentium or fast 486 CPU is recommended, with 16MB of random-access memory.

The key point about this version is that it is evolutionary, not revolutionary. It is designed to bridge the gaps between Softdesk Auto-Architect and ASG Architectural (now that the two firms have merged), and between AutoCAD 12 and 13 (helping architects use both AutoCAD versions in the same practice). It does not take particular advantage of AutoCAD 13 features; Softdesk promises a Windows version by the time you read this, and a more Release 13-specific version later.

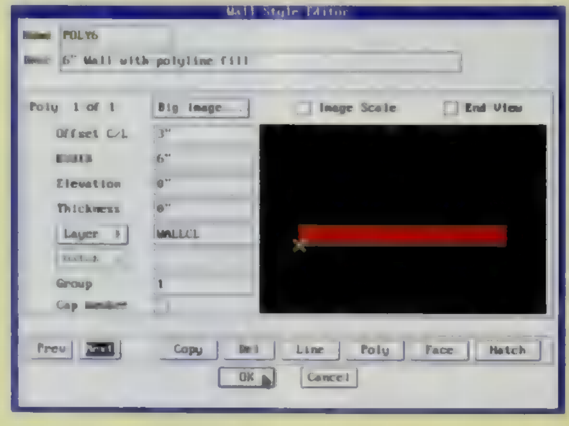
The Core software provides functionality in common for many Softdesk products. With the Core, you have layer control, symbols, an interface to data tables, drawing annotation tools, and basic drawing setup and project-management functions.

The Auto-Architect module adds an astounding range of functions—some of which are now offered (one way or another) inside AutoCAD 13 itself. Many are drafting tools, of course. But many are planning and project-management tools.

For instance, you get nice drawing tools for walls—you can draw them, clean up intersections, specify thickness and orientation, and so forth. The main advantage over AutoCAD itself, however, is in the variety of styles available.

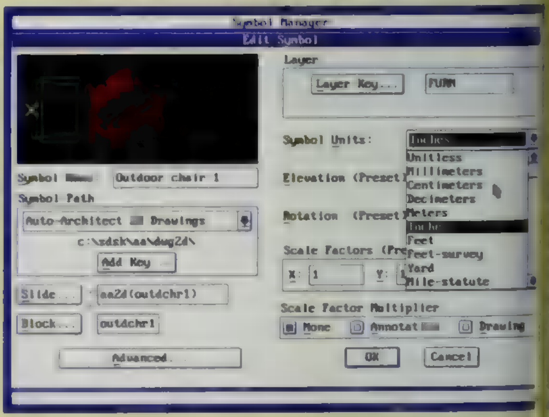
Likewise, the door and window tools make it easy to place doors and windows from symbol libraries, working in 3D as well as 2D, and working in plan, elevation, or 3D views. You get a nice suite of commands for drawing ceiling grids, arranging fixtures, drawing elevators, escalators, fireplaces, stairs, roofs, and so forth. You can set the system to hunt for 3D symbols and use them instead of 2D.

You also get space-planning tools—allowing easy labeling of spaces, subdivisions or exist-



POLY6
6" Wall with polyline fill
Poly 1 of 1
Offset C/L 3"
6"
Elevation 0"
Thickness 0"
Layer WALLCL
Group 1

[illegible] polyline walls are included in the Auto-Architect's wall library.



Layer FURN
Symbol Units: Inches
Symbol Outdoor chair 1
Auto-Architect Drawings
c:\sdsk\aa\dwg2d\
Slide aa2d(outdchr1)
Block outdchr1
X: 1

The new symbol manager in Auto-Architect provides flexible control over symbols, with a customizable menu with direct access to 12 symbol palettes. Over 700 symbols are included.

uto-Architect from Softdesk is among a select group of comprehensive” packages. Facade 2.6 is a drafting aid that an be enhanced with a comprehensive package later.

g spaces, and area calculations. And you et tools for editing blocks, for sophisticated imensioning, and more.

he Core settings and Auto-Architect set- ngs allow you much better 3D control than ithin AutoCAD itself and better quality-ontrol features—maximum wall thickness, r instance, and automatic numbering of ttributes. To get the most advantage out of is product, spring for the Productivity ools package; it offers nice database links. e didn't review it this time around, however.

anuals: Core has one 168-page reference anual. Auto-Architect has a 259-page refer- nce and 86-page tutorial—all small-format iral-bound paperbacks. The manuals are ell written and well illustrated. *ase-of-use:* Installation is slow but straight- rward on a standard system; you install utoCAD first, then the Core, then Auto- rchitect. We tested only the DOS version. n a 33 MHz 486 with 16MB of random- ccess memory, we were comfortable with utoCAD Release 12. But a 66 MHz Pentium bout 5 times faster) was much more com- rtable running with Release 13. *rror-trapping:* As with many add-ons, you n inadvertently duplicate keyboard macros om AutoCAD or other add-ons. Likewise, u can over-automate—making some enti- es part of a wall that is undergoing an tersection cleanup, for instance, when you n't want to.

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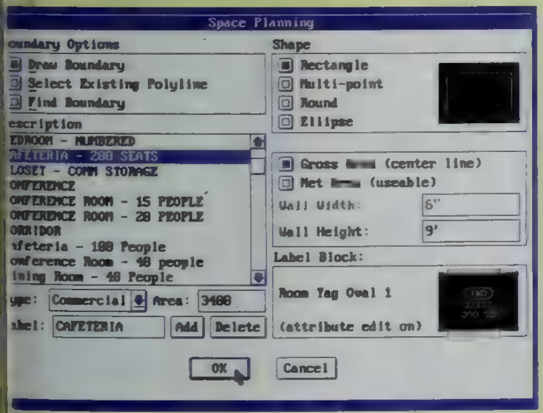

Space Planning

oundary Options
● Draw Boundary
○ Select Existing Polyline
○ Find Boundary

escription
EDROOM - NUMBERED
AFETERIA - 280 SEATS
LOSET - COMM STORAGE
ONFERENCE
ONFERENCE ROOM - 15 PEOPLE
ONFERENCE ROOM - 20 PEOPLE
ORRIDOR
afeteria - 100 People
onference Room - 40 people
ining Room - 40 People

ype: Commercial Area: 3400
abel: CAFETERIA

Shape
● Rectangle
○ Multi-point
○ Round
○ Ellipse

● Gross (center line)
○ Net (useable)
Wall Width: 6"
Wall Height: 9'

Label Block:
Room Tag Oval 1
(attribute edit on)

uto-Architect's space-planning capabilities low users to add their own specifications to ganize multi-shaped areas and perform tomatic area correction through the Space anning Database.

Facade 2.6

Vendor: Eclipse Software, Inc., 301 West Holly St., Suite U4, Bellingham, WA 98225-4328. 206/676-6175, fax 206/576-0921.
Price: $189; upgrades $50; unlimited toll-call phone support.
Equipment required: Same as for Auto-Architect. Facade needs about 4MB of disk space for its files. Version 2.6 works with DOS and Windows versions of AutoCAD 12 and 13.

Clever, clever, clever. Want a 3D model of a single-family home? Draw the perimeter walls—about a minute. Add a roof—perhaps two hip roofs, intersecting on an L-shaped plan. That's another minute. Add a few dormers—less than a minute each. Specify a roof overhang—another minute. Add some doors and windows—about 30 seconds each. You can do it with the client at your shoulder. Even better, the models are ready to render.

No, there are no booleans; this is not a solids-modeling package. Really complex plans and multi-height walls take enough time to give you pause.

But Facade does the standard things remarkably, stunningly quick. One of our reviewers laid out a 10,000-sq-ft retail-store exterior and placed the interiors—a counter and shelf-module at a time, duplicating modules as needed—in a half-hour in AutoCAD 12 for Windows. Shading took about as long. The design was rough, but the client had no trouble visualizing the idea.

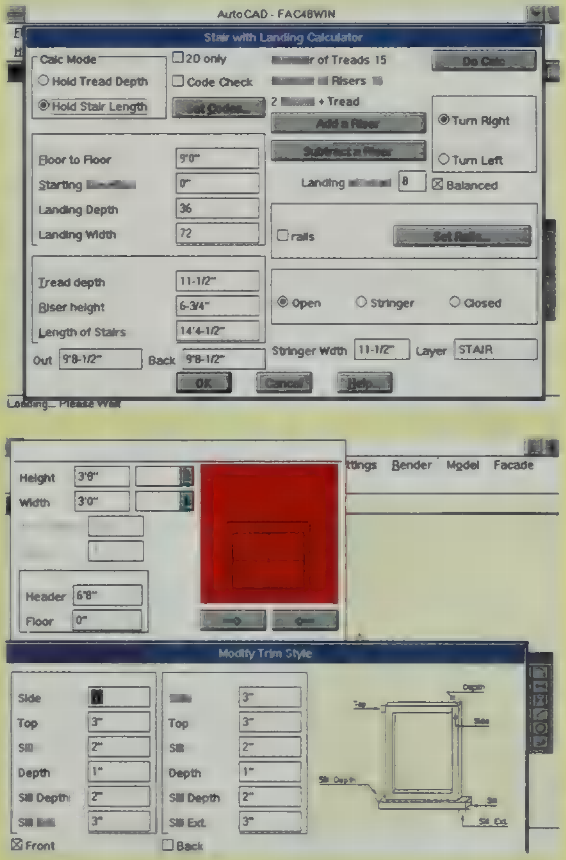
Once you've loaded Facade onto your hard disk and told AutoCAD where to find it (it does not have to be on the same logical drive), you start Facade the way many specialized add-ons start—by loading a template file with default values, layer specifications, and so forth built in. AutoCAD then hunts around for Facade's command menu and adds it to its own pull-down menu system.

We found it slow on a 33 MHz 486, and a delight, even with AutoCAD 13 for Windows (it runs more slowly than 12) on a 66 MHz Pentium machine—both with 16MB of RAM. We also loaded AutoCAD 13 for Windows into Windows NT (32MB of RAM) and, a tad slowly, ran Facade with it.

Facade is a bit of a misnomer; it *does* have tools for basic interiors, stairs in particular. One key to Facade's ease of use is its presentation of dialog boxes that allows you to set standards for the symbols (walls, doors) you paste into walls, standards for intersections, roofs and overhangs, and so forth.

Manuals: A 142-page spiral-bound small-format paperback for command reference. Two excellent tutorials, one for stud-wall buildings, one for small multi-story buildings. *Ease-of-use:* Stunning on a fast machine. Interface for AutoCAD 12 and 13 vary slightly because of AutoCAD itself. *Error-trapping:* Good alert boxes and on-screen-presentation help. You are warned of almost all problems. The layer structure may be incompatible with some other add-ons, and should be checked, but the likelihood of a conflict is slight.

301 *on Reader Service Card*


AutoCAD - FAC48WIN
Stair with Landing Calculator

Calc Mode
○ Hold Tread Depth
● Hold Stair Length
☐ 2D only
☐ Code Check
r of Treads 15
Risers
2 + Tread
● Turn Right
○ Turn Left
Floor to Floor 9'0"
Starting 0"
Landing Depth 36
Landing Width 72
Landing 8
☒ Balanced
☐ rails
Tread depth 11-1/2"
Riser height 6-3/4"
Length of Stairs 14'4-1/2"
● Open ○ Stringer ○ Closed
Out 9'8-1/2" Back 9'8-1/2"
Stringer Width 11-1/2" Layer STAIR
Loading... Please Wait

Height 3'8"
Width 3'0"
Header 6'8"
Floor 0"

Modify Trim Style
Side
Top 3"
Sill 2"
Depth 1"
Sill Depth 2"
Sill 3"
☒ Front

3"
Top 3"
Sill 2"
Depth 1"
Sill Depth 2"
Sill Ext 3"
☐ Back

Top: Facade 2.6 dialog box for stairway with landing. Bottom: Dialog box for modifying window-trim style

Natural Materials Used Naturally

Industrial Chic in a Houston Highrise

A down-to-the-bare-concrete rehab of the 28th floor gave designer David Guthrie a blank slate for his client's rather institutional taste in kitchen and bath equipment. Lacewood-veneer cabinets stained teal green add color to a primarily metallic-toned kitchen. Drawer pulls—aluminum cleats from a marine-supply outlet —were nickel-plated to coordinate with the stainless-steel of the countertops and range hood. The new master bath (far right) has what Guthrie says is the only "organic" shape in the otherwise square-edged apartment: a free-form fiberglass tub/spa onto which the the designer epoxied thousands of midnight-blue mosaic tiles. All exposed plumbing was nickel-plated.

Designer: *David Guthrie, ZeitBauen+Design*
Sources: *Wall tile: Buchtal (Chroma). Mosaics: Dal-Tile. Bath faucets: Kohler Co. Refrigerator: Traulsen. Sinks: Blanco*

Reflective Surfaces Lighten a Master Bath

A new bath placed within a 200-year-old New Jersey farmhouse used materials selected for their clarity, affinity for water, and purity. A white terrazzo tile, used on both walls and floor, has light-reflecting glass chips. The lavatory counter, a massive 1 1/2 -in.-thick slab of glass, is held above storage cabinets on custom stainless-steel brackets that double as towel bars. Cutouts for the two drop-in wash basins were made—carefully—with waterjet high-pressure cutting equipment. Mirrors conceal cabinets and milk-glass diffusers shield incandescent picture bulbs placed above the counter.

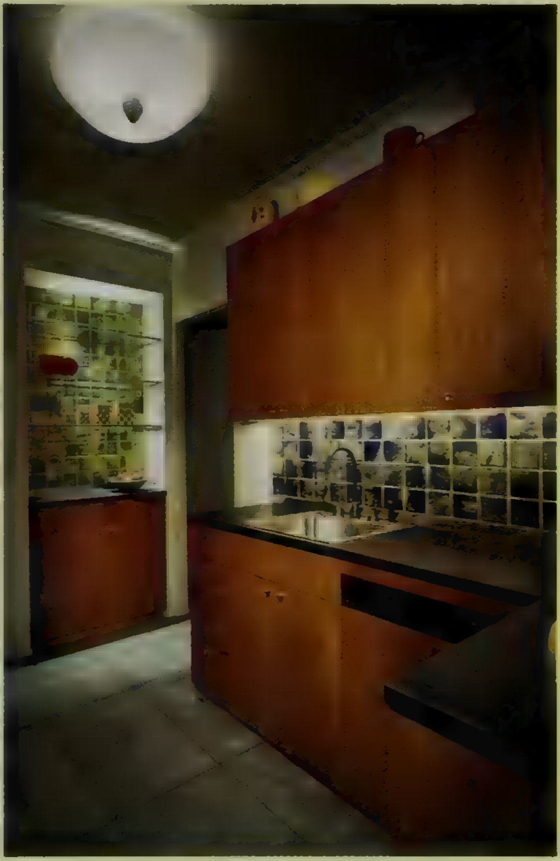
Architect: *Stamberg Aferiat Architecture*
Sources: *Faucets and washbasins: Kroin, Inc. (Arne Jacobsen). Terrazzo tile: Perma-Grain Products (Armstone). Glass counter: John Depp Inc. Low-voltage pendants: Flos, Inc. [illegible]. Drawer pulls: [illegible]. Glass block: Pittsburgh-Corning*

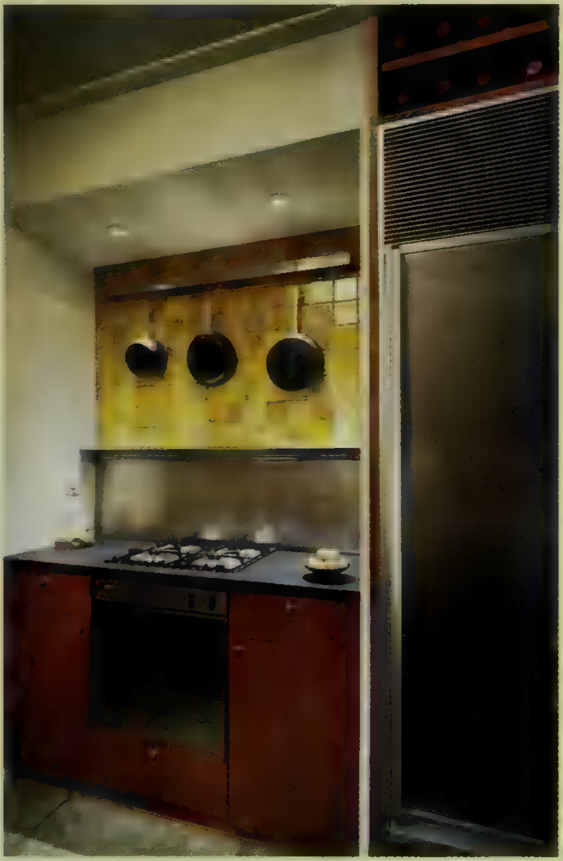
*. portfolio of recent kitchen and bath projects illustrates how
ıaterials such as cast- and mosaic-tile glass and stainless
teel are increasingly prominent in the architectural palette.*

ight Tolerances

fter Harry Elson built out irregular walls to
eate a clean space, this Riverside Drive
partment kitchen had only 100 sq ft—so fit
d finish really counted. Measurements for
binetry and drywall were done only after
e handmade tile arrived, to account for the
pace the tile and grout lines would need: no
es were cut to fit. Quarter-sawn cherry,
lected for its holographic horizontal
ttern, gives a sense of depth and move-
ent to the cabinets. The thin-concrete floor
sectioned by zinc terrazzo strips; counters
e Pennsylvania ribbon slate. All metal—
frigerator front, backsplash, separation
rips—was orbit brushed.

rchitect: *Elson+Gold*
ontractor: *McGraime Woodworking Inc.*
ources: *Tile: Ann Sacks. Luminaire:
aldinger. Spots: Halo. Undercabinet light:
lkco. Sink: Elkay. Faucets: Chicago Faucet.
ooktop: Gaggenau. Refrigerator: Sub-Zero*



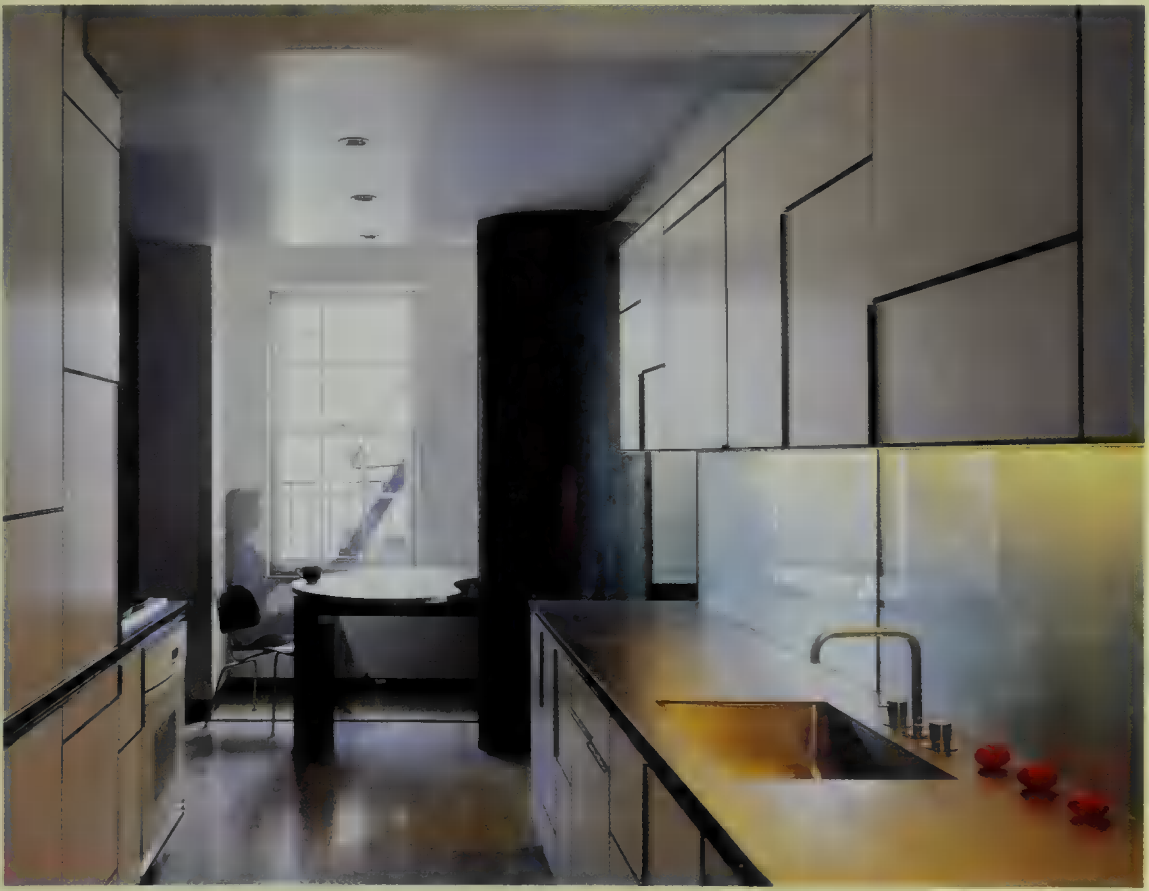


© Peter Paige photos

luminated Pullman Kitchen

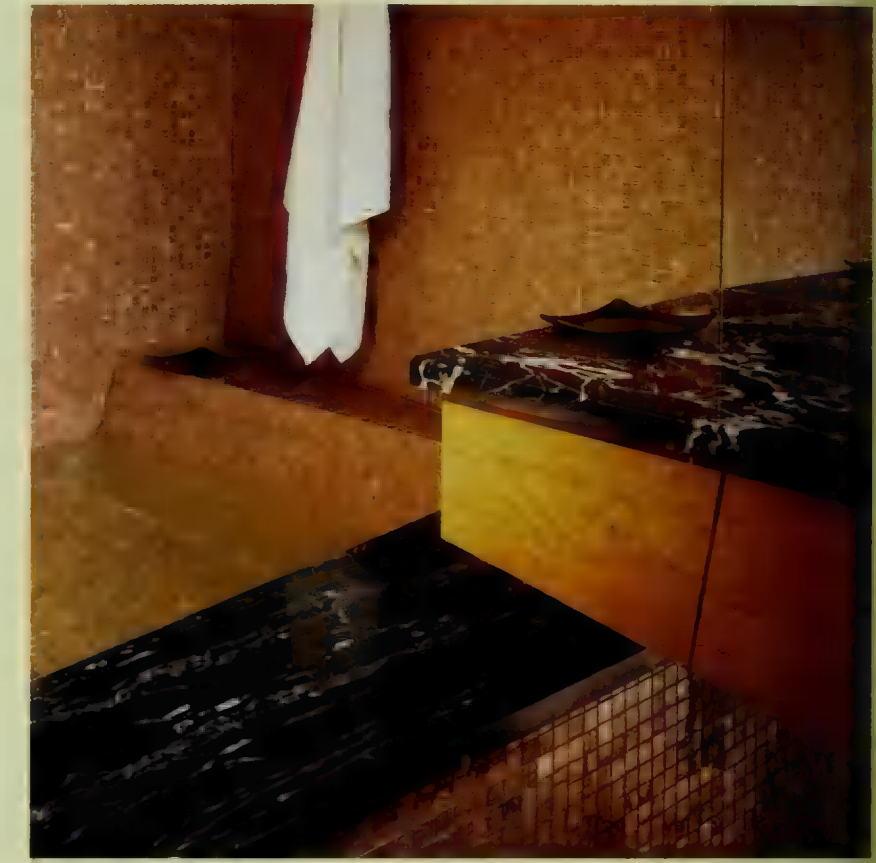
a relatively large eat-in kitchen (270 sq ft)
r a family of four on Manhattan's East
de, David Ling pulled light into the interior
pace by using smooth, reflective materials
d a palette of pale colors. Base and wall
binets are faced in white laminate, outlined
waxed-steel strips for a deliberately Mon-
ian effect. The custom table near the
ndow is made of the same sandblasted
ass as the illuminated backsplashes; coun-
rs are hand-burnished stainless steel. The
ly real color is the bright-blue glass mosaic
e on the space-dividing accent wall.

rchitect: *David Ling, David Ling, Archi-
cts. Collaborator: Sofia Ames-Leek*
ources: *Cobalt glass-mosaic tile: Hastings
le. Laminate: Formica Corp. Faucets:
roin, Inc. Lighting: Halo. Refrigerator:
ıb-Zero*



© Scott Frances/Esto photo

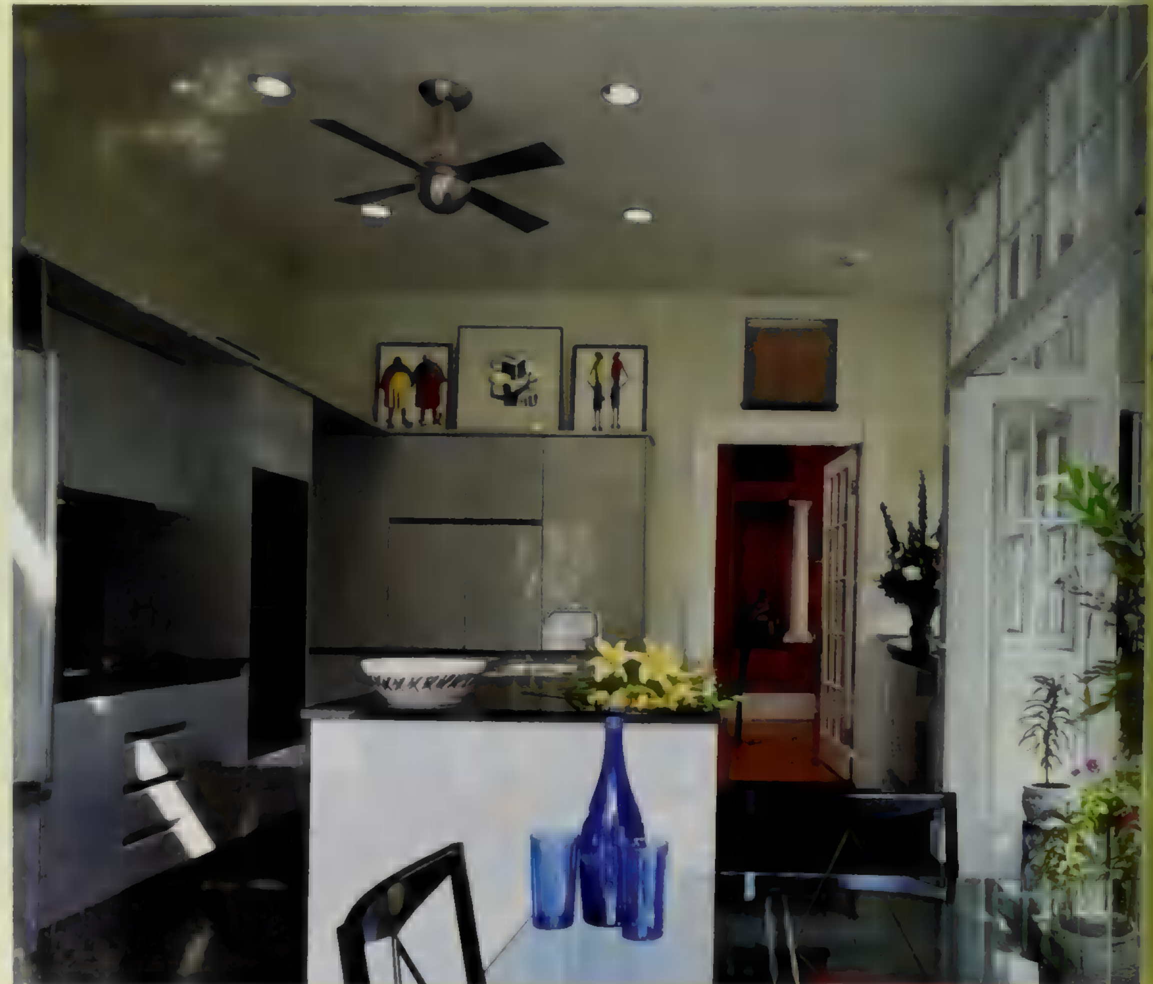
The Zen of Bathing



For the windowless bath of a Manhattan apartment, Margaret Helfand selected a unusual colored glass tile. The body of the Italian-made tile is clear, giving each tiny square an impression of depth, while copper dust applied to the back surface picks up the electric light and adds sparkle. Strongly-veined black granite, used for the vanity counter and tub surround, has a metallic gleam of its own. The custom-size tub itself is five-feet-square (and extra deep) so that no shower curtain was needed.

Architect: *Margaret Helfand Associates; principal: Margaret Helfand; project architect: Marti Cowan*
Sources: *Glass mosaic tile: Bisazza Mosaico*

A Room With a View



The kitchen in an extensively remodeled yet still fairly small turn-of-the-century home outside Boston opens onto a sunny conservatory space that brightens the room's muted grays and blacks. Custom-designed hinges allow a series of mullioned doors to fold back completely, opening the kitchen onto the sun space, or closing it off during colder weather. The Edwardian details of the dining room are visible through the connecting doorway. The client had requested that the Absolute Black granite counters remain uncluttered, so toaster, blender, and coffeepot hide inside the storage wall of cabinets.

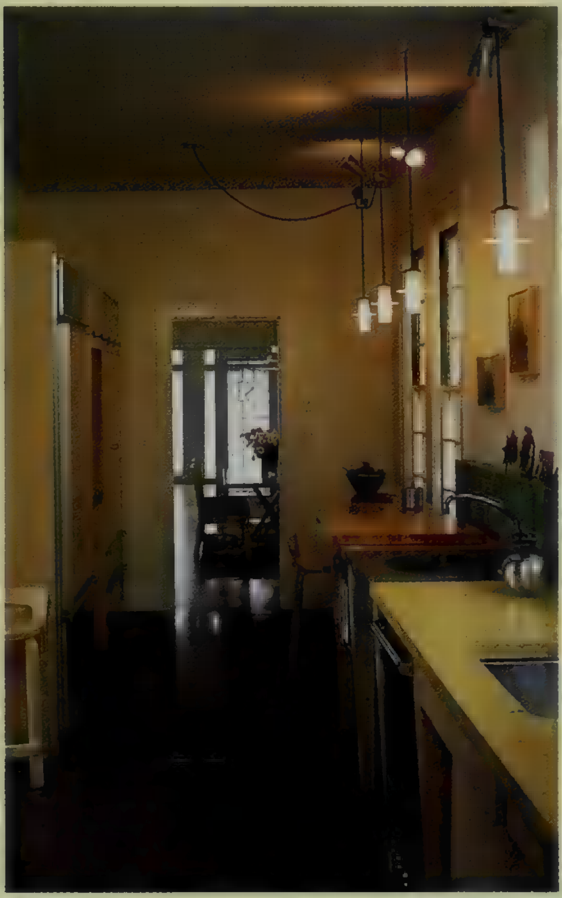
Architect: *Signer Harris Architects*
Sources: *Faucets: Kroin. Range hood: Best. Stove top: Gaggenau. Oven: Dacor. Flooring: PermaGrain Products. Paint: Benjamin Moore & Co. Cabinetry: Snaidero. Fan: Ron Rezek*

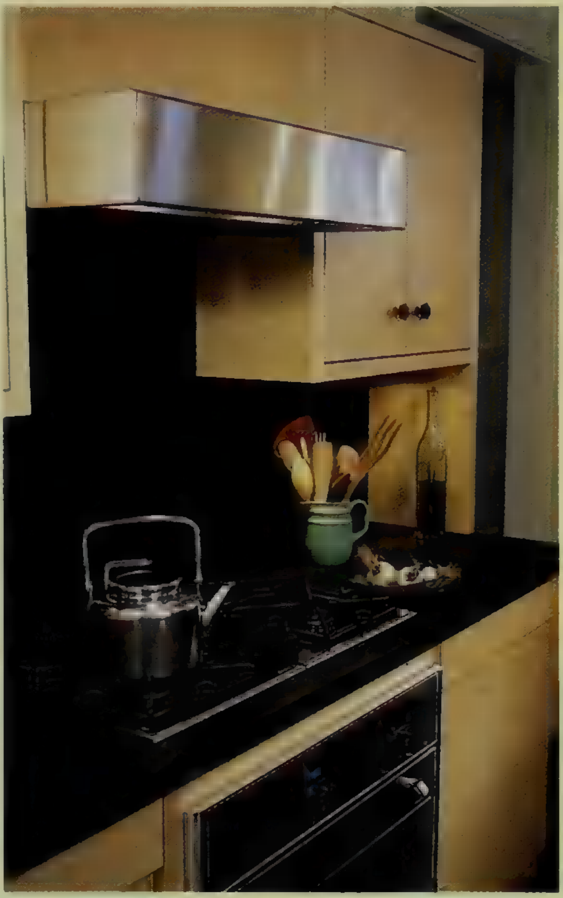
ast Meets West

vo recent San Francisco-area residential
ojects by Bruce Tomb and John Randolph
the Interim Office of Architecture (IOOA)
ıstrate different takes on California. The
w-light-filled apartment kitchen shown top
es the aqua, yellow, and light-toned woods
50s Moderne in a natural, not retro,
anner. The long counter opposite the stove
ft photo) has different materials in series:
integrally colored yellow-concrete counter
y Buddy Rhodes) butts up to a cast-con-
ete vegetable sink that gives over to a
pering clear-maple kitchen table. Mexican
een-glass mosaics are used on both floor
d counter backsplash. Black slate around
e cooktop contrasts with maple-veneer
se and wall cabinets. Pendant lights of
osted glass, steel, and aluminum were
signed by the architects.

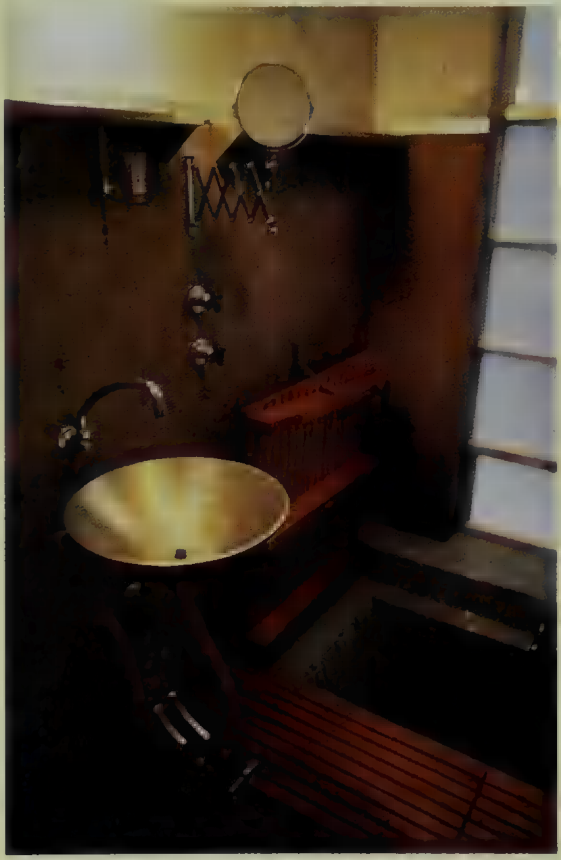
ne bathing space shown below in a renovat-
North Beach House, is more eastward
oking, with a deep Japanese-style soaking
b and light-sharing Shoji glazed in translu-
nt fiberglass. The aluminum basin
bricated by IOOA) is a piece of furniture—
e that seems capable of walking away,
iling its rubber drain. The cast-in-place
ncrete tub is usually covered by hinged
ood decking, letting it function as a draining
or for the wall-mounted shower.

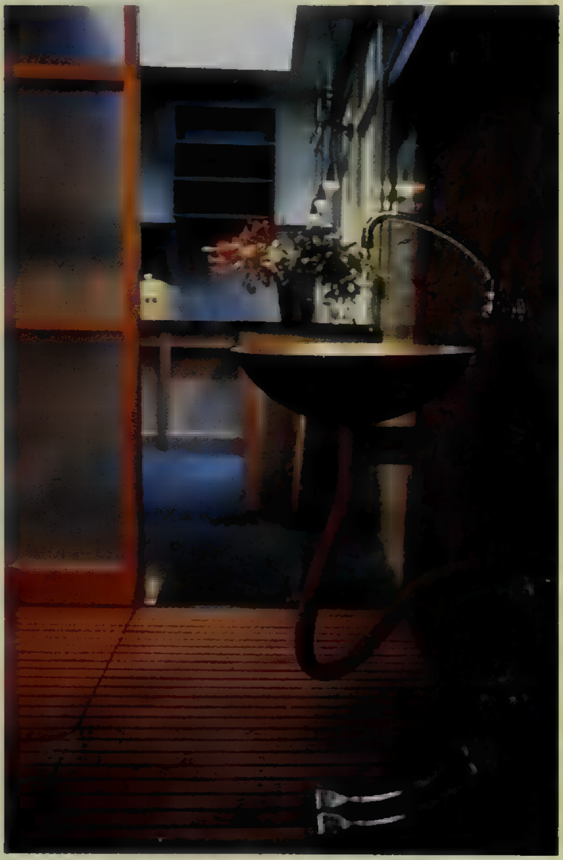
chitect: *Interim Office of Architecture*
ntractor: *Matarozzi/Pelsinger Builders*
urces: *Kitchen—Cook top: GE (Mono-*
am). Oven: Thermidor. Paints: Benjamin
oore & Co. Pedal-operated institutional
ucets: Chicago Faucet. Ventilation hood:
stom, fabricated by Lewis Sheet Metal.
th—Translucent panels: Fipon. Plumbing
ings: Chicago Faucet. Integral-color
ucco: Keene





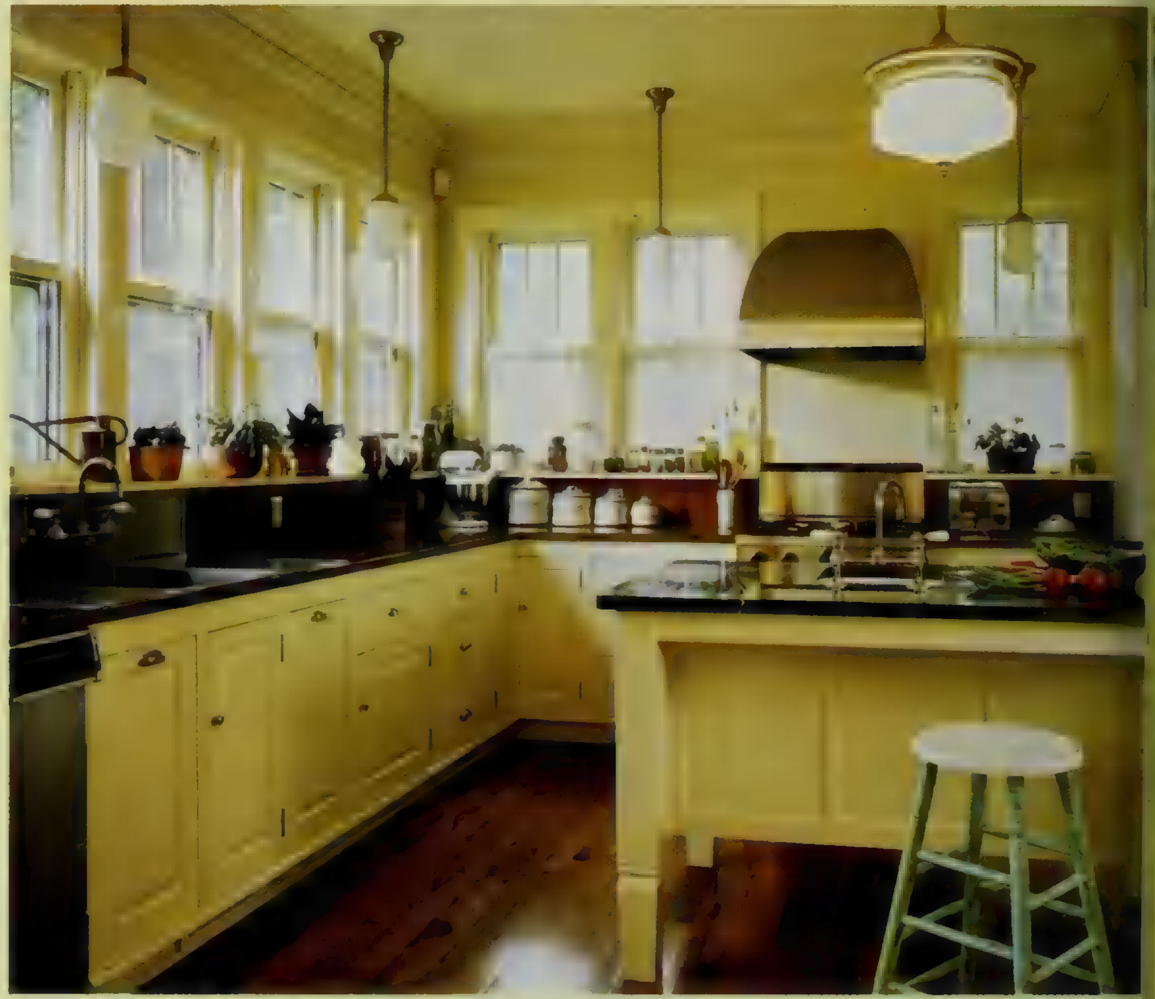
© Richard Barnes photos





© Douglas Burnham, IOOA photos

Addition In Keeping



The owners of a grand shingle-style home in Minneapolis wanted their new kitchen to have the same airy feeling as the large, added-on porch it replaced. Architect Joseph Metzler lined the walls with double-hung windows, and used period-style milk-glass lights over the counters and center island. The custom cabinetry mimics the look and heft of an old built-in buffet found in the butler's pantry; tops are clear hard maple with an aniline stain. Plumbing for the island sink has been brought up through the legs of the unit. The owners designed—and hand finished—the stainless-steel kitchen sink and range hood.

Architect: *Mulfinger, Susanka & Mahady Architects, Inc.— Joseph Metzler, project architect*
Sources: *Replica fixtures: Rejuvenation Lamp & Fixture Co. Sink: Palm Brothers. Hood: Crystal Welding. Faucets: Chicago Faucet (customized). Windows: Marvin Windows. Paints: Benjamin Moore & Co. Counter finish: Depthane*

Rugged Individualism

Commissioned to do the interiors of a house in Ormond Beach, Florida designed by William Morgan, Wayne Berg wanted to show two facets of the personality of his client: a smooth, polished public personna and the owner's more rugged, sportsman side. The materials chosen for kitchen and bath spaces reflect both.

The long bath (photos right and opposite left) has walls and floors of the same Idaho quartzite, but in different finishes: honed and smooth on the floor and rough textured on the skylit walls. The brass framing of the Carrara glass on the facing wall picks up the grid structure of Morgan's onyx wall beyond, which forms part of the shower enclosure. The onyx panels are always luminous, either [illegible] daylight via the central atrium [illegible] or glowing to the outdoors [illegible] back-lit by electric light. The [illegible] between bath and bedroom and bath [illegible] are made of two layers of patterned glass, laminated smooth-surface-in so that both sides have the material's characteristic texture. The brass shower is meant to patinate. Custom silvered cast-glass diffuses light from an incandescent lamp set into the wall and hides a medicine cabinet. Other walls are clear-coated birds-eye maple.

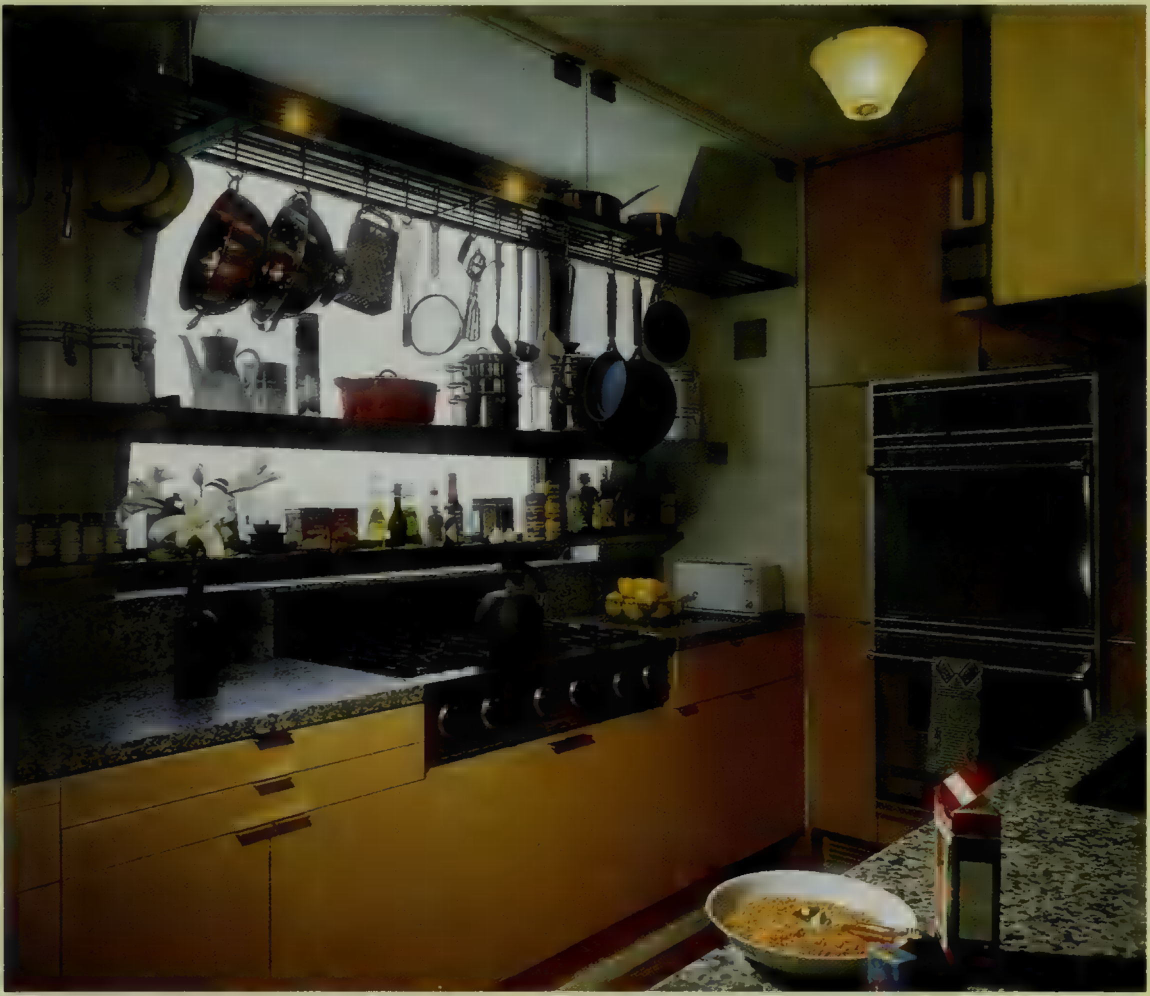
The kitchen (far right) is separated from the more-formal atrium by a thin screen wall made of maple like a piece of furniture. A metal framework helps support the wall and holds cookbooks. The cooking island is made of cast concrete colored by metallic powder sprinkled into the formwork before the pour; the countertop is natural teak routed in a self-draining pattern.

Architect: *Pasanella & Klein, Stolzman & Berg; design partner: Wayne Berg; project architect/designer: Albert Ho. Interior-materials consultant: Tse-Yun Chu*
Sources: *Faucets; towel bars: Kroin, Inc. Tub: American Standard. Patterned glass: AFG Industries (Industrex)*

he Biggest Little Kitchen in ew York City

ee Pomeroy sought inspiration from ancient
inciples of household management—a
ace for everything and everything in its
ace—when fitting Sarah Pomeroy's profes-
onal-calibre cooking tools into a small
tchen tucked into the mansarded penthouse
a West Side landmark. Drawers under the
anite counter hold appliances, garbage
ils—even the fire extinguisher. Though
nall, the kitchen has distinct food prep,
oking, service, and cleanup sectors. Stain-
ss-steel wire shelving holds often-used pots;
hinged glass enclosure above acts as a side-
nted range hood to capture cooking fumes.

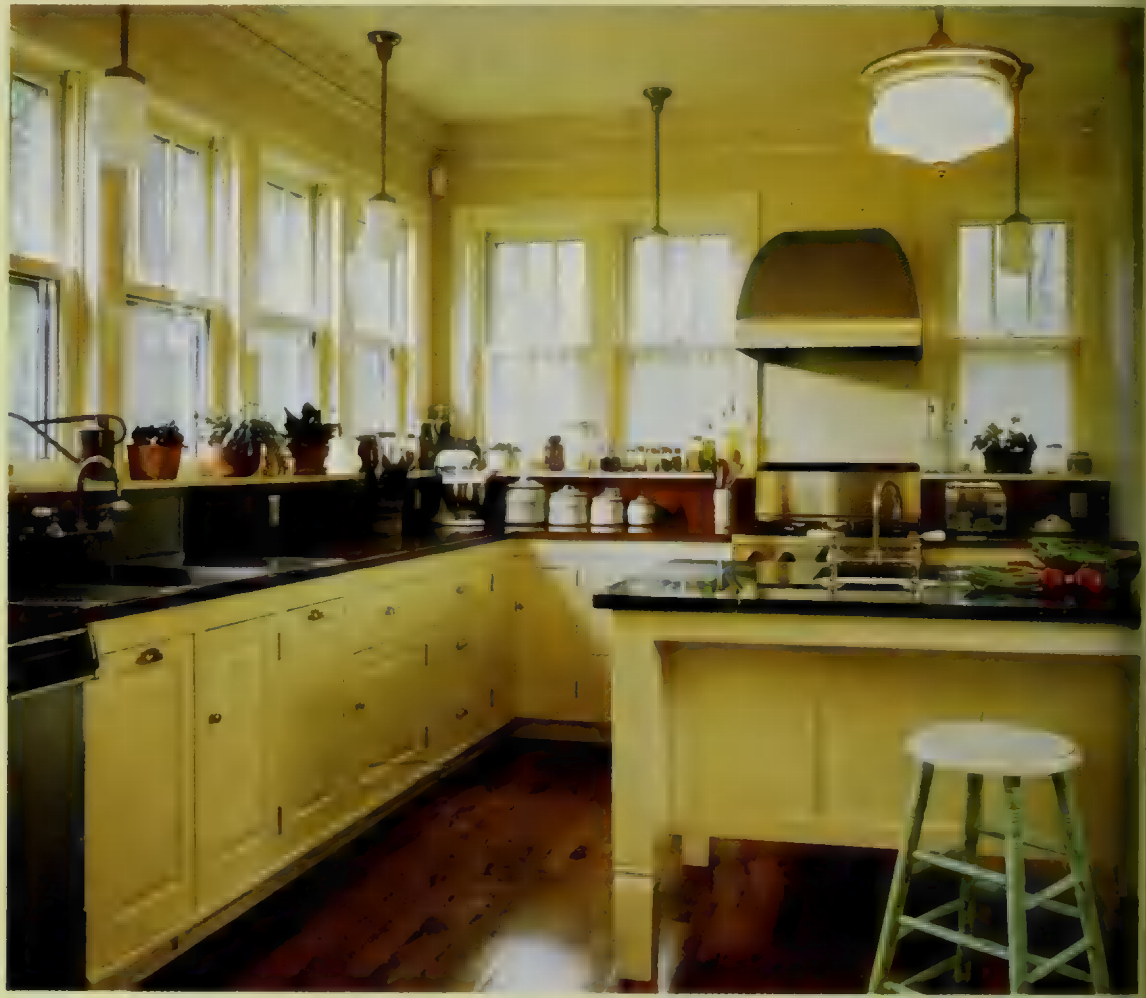
rchitect: *Lee Harris Pomeroy*
ources: *Stainless-steel ovens and cooktop:*
king. Pendant fixtures: Artemide, Inc.
nk: Elkay Mfg. Pulls: Haefle. Counters:
ld Spring Granite



© Paul Warchol photo

© Paul Warchol photos

Addition In Keeping



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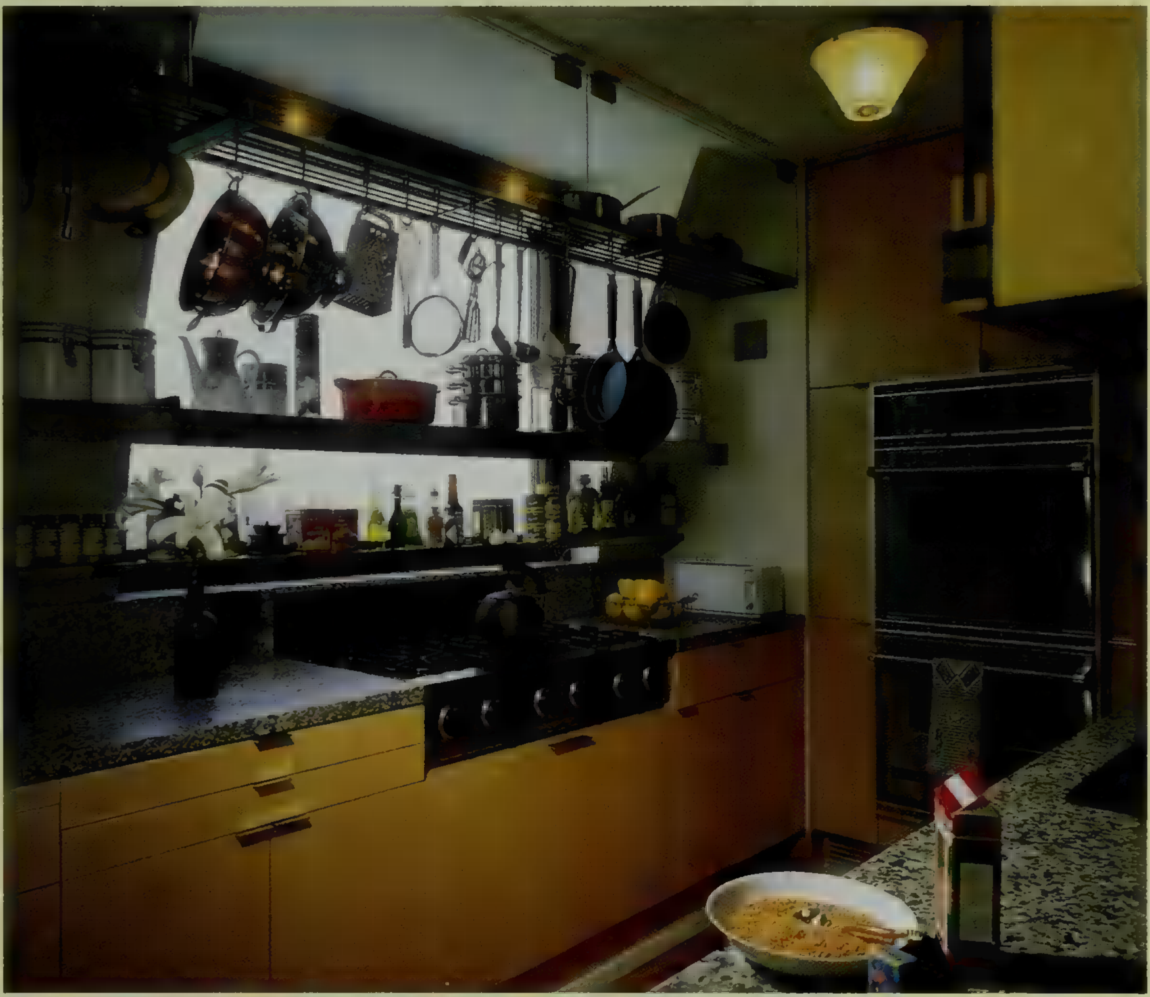

© Paul Warchol photo

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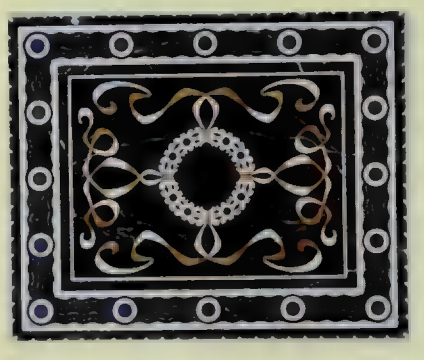
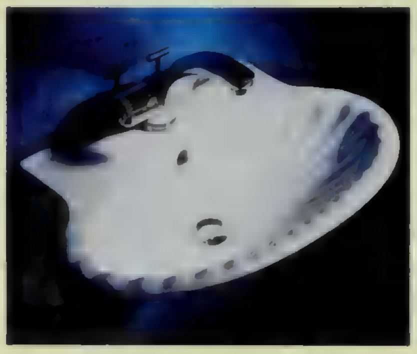
Product Briefs/Residential

302. Southwestern style
Made in Germany with the rounded-edge shape and softer colorations ascribed to the American Southwest, Jado's new Santa Fe faucet comes in a brushed-nickel finish over the all-brass body. The style is also offered in matching shower and tub sets, and as cabinet knobs and door hardware. 805/482-2666. Jado, Camarillo, Calif.



303. Natural-stone "carpet"
Made of colorful marbles laser-cut and assembled in Italy, the Marmo-carpet is an area-rug-size (about 8-by 6 1/2-ft) Renaissance-style floor suitable for indoor and outdoor use. Each pattern (Urbinum is shown) comes as four 3/4-in.-thick sections mounted on aluminum honeycomb panels, ready to set into wood or tile floors. International Woods & Quarries, New York City.



304. Seashell basin
Part of a complete bath line inspired by shell shapes, the Coquille hand-basin is a wall-mount, small-scale lavatory designed for powder rooms. Pedestal, drop-in, and semi-enclosed-style lavatories are also offered. 800/338-1756. Porcher, A Division of American Standard, Inc., Chicago.

305. Custom range hoods
A smaller-scale version of this maker's attention-getting kitchen ventilation hoods, seamlessly welded Underlines models fit under or between wall-hung cabinets. Vented by centrifugal exhausters or remote fans of from 600 to 1400 cfm, hoods come 36-, 42-, and 48-in. wide and up to 27-in. deep for restaurant-style cooktops or ranges. Utensil hanger optional. Abbaka, San Francisco.

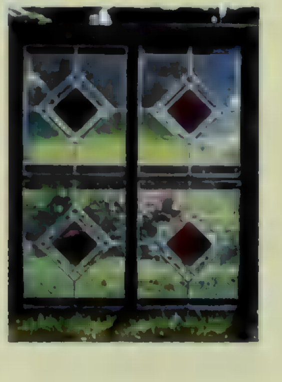
306. Translucent barrel vault
Architect Ron Yeo used curved structural fiberglass-sandwich panels insulated with light-diffusing, translucent fiberglass batts as both roof and daylighting source for a third-floor studio in a California house. Panels offer light-transmission ranges of from 3 to 74 percent; a 17-percent level was specified for this application. 800/258-9777. Kalwall Corp., Manchester, N.H.

307. Modern material
Designer Patrick Naggar showcased Surell solid-surface material in his custom Aura bath, using it for wall tiles, flooring, tub surround, cabinets, counter, and sinks: even the light fixture has a Surell diffuser. The composite comes in 26 colors, and can be sculpted, molded, cut, routed, inlaid, and shaped to fit any custom application. 800/FORMICA. Formica Corp., Cincinnati.

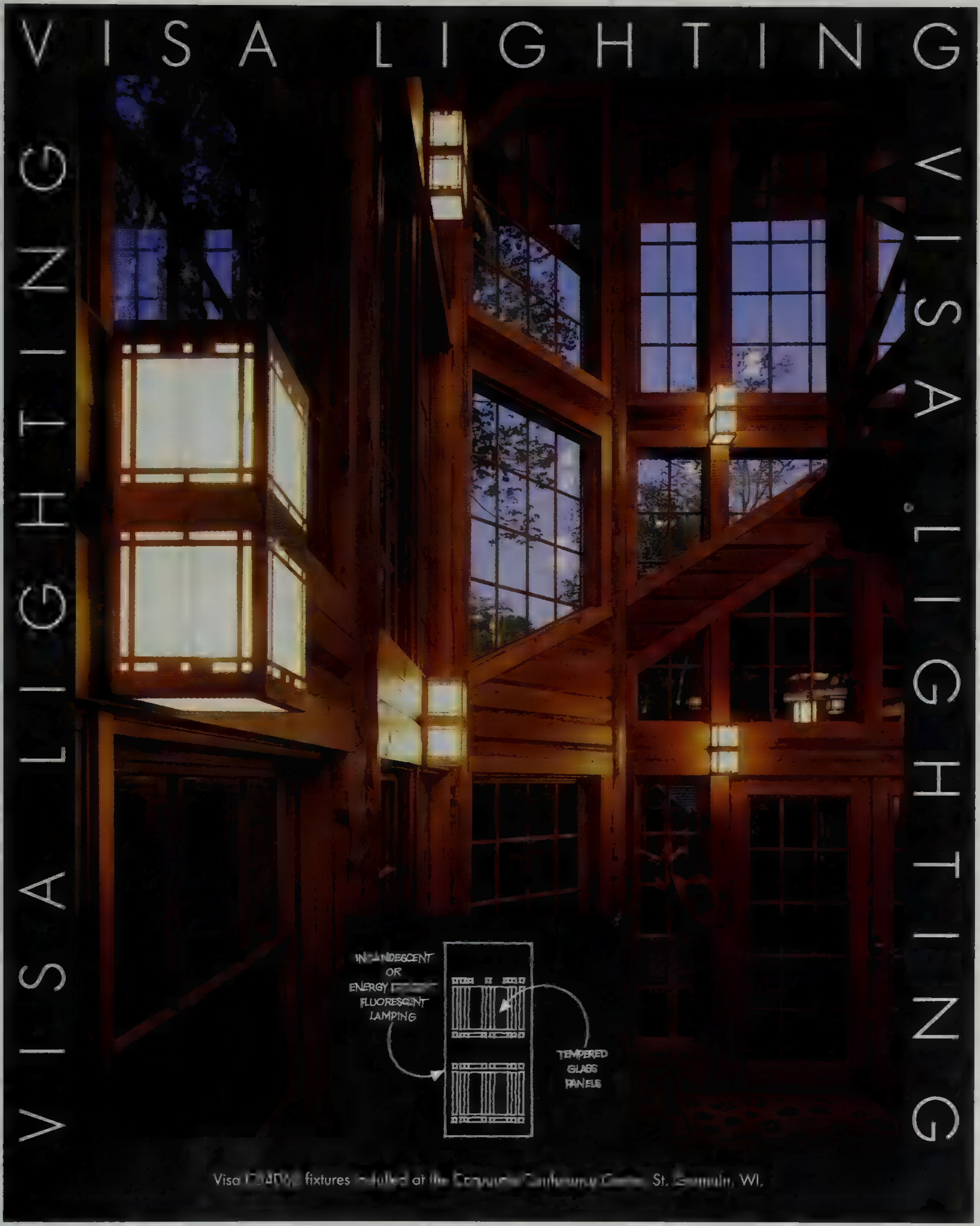
308. Single-control faucet
A new kitchen line from a source of luxury plumbing fittings, the Kouzina faucet is made of solid brass with a ceramic disc valve. Features include a pull-out spray on a retractable hose; an integral water diverter offers a choice of aerated stream or a pressure spray. Available in four faucet/handle versions, including a high-arc spout. Kallista, Inc., San Leandro, Calif.

309. Distressed cabinetry
A new finish option, Stonewood is said to mimic the wear, nicks, and scratches that would occur naturally in furnishings used over several generations. Produced by wire-brushing, sanding, and staining cabinets by hand, the antique finish is offered on eight country-style designs and sever colors (Moss is shown; kitchen design by George Rallis). Rutt Custom Cabinetry, Goodville, Pa.

310. Contrasting solid surface
Corian offers an expanded range of colors available in various styles of integrally formed vanities—countertop, sink, and coved backsplash furnished as one unit. Bowls now can be ordered in dark Sierra colors (Midnight is shown) set into counters of a contrasting shade. The D shape is described as suitable for both hom and commercial use. 800/4-CORIAN. DuPont Co., Wilmington, Del.



311. Architectural stained glas
Richard Giles fabricates authentic stained glass into custom windows and signage for homes, gardens, and commercial spaces. Pictured is one o a limited edition of wooden sash salvaged from dismantled Pennsylvani Dutch barns, refurbished and glazed in quilt-like patterns for use as decoration or as a window. 800/261-6382. South Mountain Stained Glass, Sinking Spring, Pa. ■



Visa [illegible] fixtures installed at the Corporate Conference Center, St. Germain, WI.

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ARCHITECTS' CHOICES AFFECT ENVIRONMENTAL QUALITY

As the world's population grows our consumption of raw materials continues to increase and the need for shelter increases as well. Less clear is how the building materials choices we make affect attempts to attain sustainability. In assessing environmental impacts of their choices, design professionals may ask themselves:

Can I be assured the materials I specify will be available for future generations in perpetuity?

Of the major building materials, only wood comes from a readily renewable source . . . trees. There is no denying trees can be — and are being — renewed at a phenomenal rate. More than 1.7 billion were planted in the U.S. in 1993 and millions of acres were reforested through planned natural regeneration. This fact of renewability makes wood the only common building material that can be assured of being available to future generations forever.

Renewable or recyclable — what's the difference?

Recycling is a positive step toward sustainability, but it is not a panacea. Few building materials can be manufactured using 100% recycled materials and none can be recycled indefinitely. Each time a material is recycled, it is degraded and a greater percentage of virgin material is needed to maintain its structural integrity. Recycling has merits — it buys us time to find alternatives, and it helps reduce the need for landfill space. But it does not solve all our environmental problems. Renewability, on the other hand, is a lasting solution for the supply of materials that can be renewed. Wood is the only primary building material currently being renewed as virgin fiber for future generations.

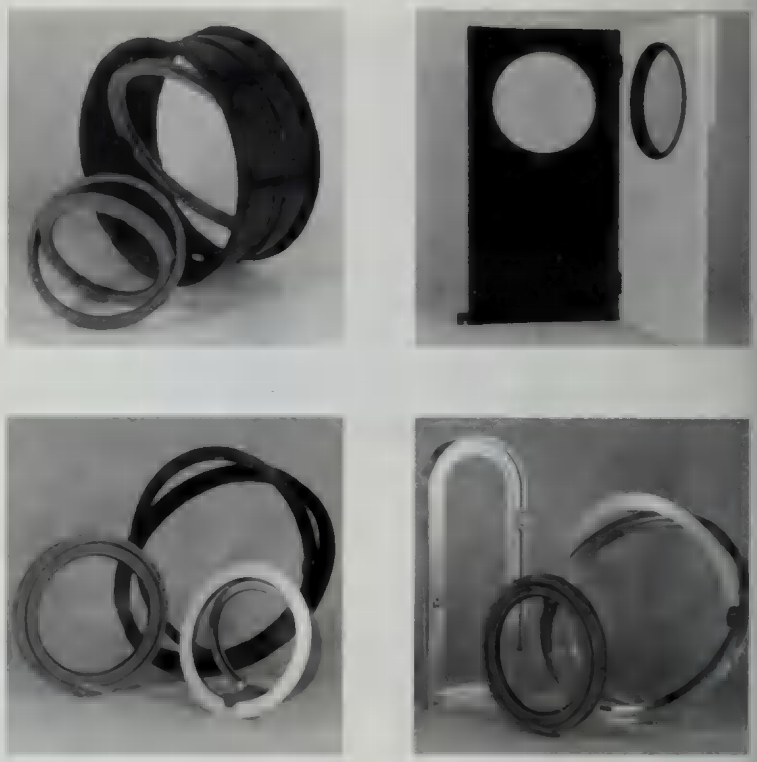
Is the material energy efficient?

The importance of energy conservation is twofold. First, much of our energy is derived from nonrenewable fossil fuels. We can't afford to waste it. Second, the implications of energy use, in terms of air and water emissions, ozone depletion, and the potential for global warming, are manifold. Architects can play a role in energy conservation by specifying materials which are energy efficient in both their manufacturing and end use. It takes far less energy to produce solid sawn lumber products than any of the alternatives. And in most cases wood requires less insulation to be used to achieve comparable energy efficiencies in use.

Does the product have unique advantages?

In addition to its renewability, a unique advantage of wood is its role in carbon sequestering. When trees grow, they absorb carbon dioxide and release oxygen, helping to purify the air we breathe and reducing the buildup of atmospheric carbon-based gases thought to contribute to global warming and the greenhouse effect. The carbon remains in the wood even after it is made into a usable product, which means buildings constructed of wood serve as carbon sinks. Meanwhile, the carbon sequestering cycle is continued with the trees planted to replace those harvested.

For more information regarding environmental impacts of various building materials, write WWPA, Dept. AR, Yeon Building, 522 SW Fifth Avenue, Portland, OR 97204, or fax (503) 224-3934



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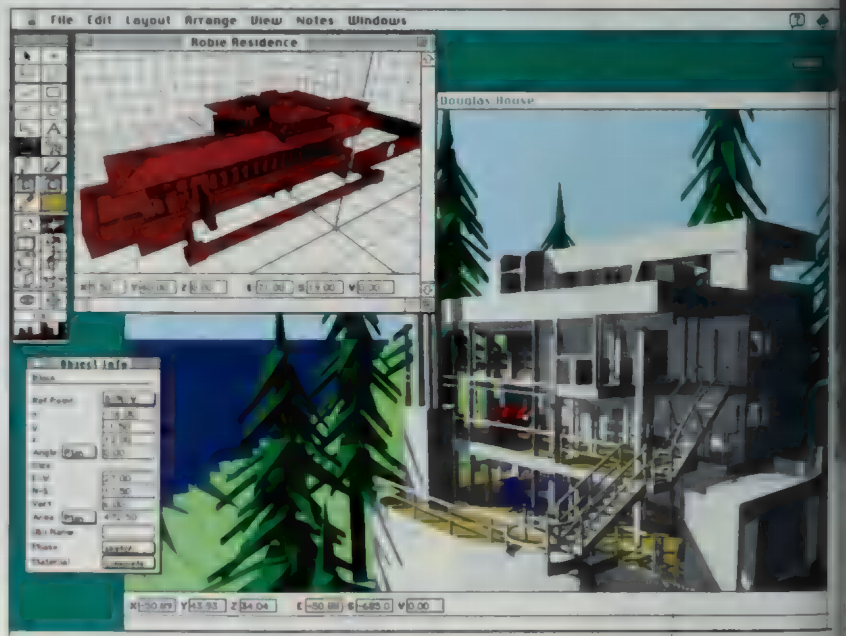

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SweetSource also showed Gordon exactly where to find additional information in his Sweet's Catalog Files. Which led him to Sweet's BuyLine® Service. Which put him in touch with the manufacturer's rep. Who put samples in his hands. From which Gordon finalized his specs, becoming, in this very swift process, a former man of steel.

Gordon Kostin, like many architectural, engineering and construction professionals, regularly uses both SweetSource and Sweet's Catalog Files to find and specify materials.

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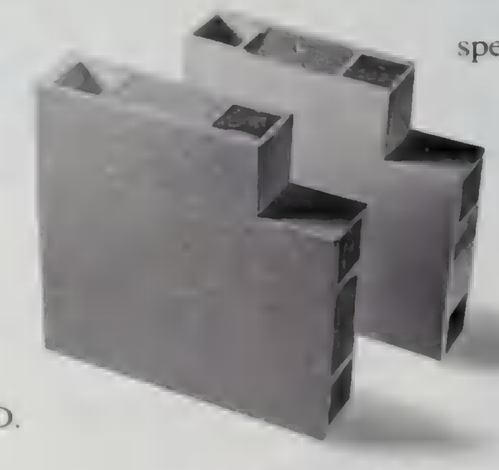

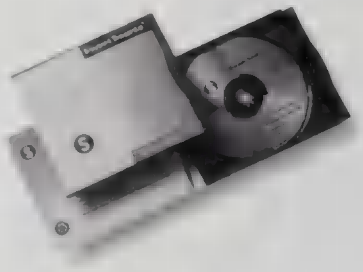

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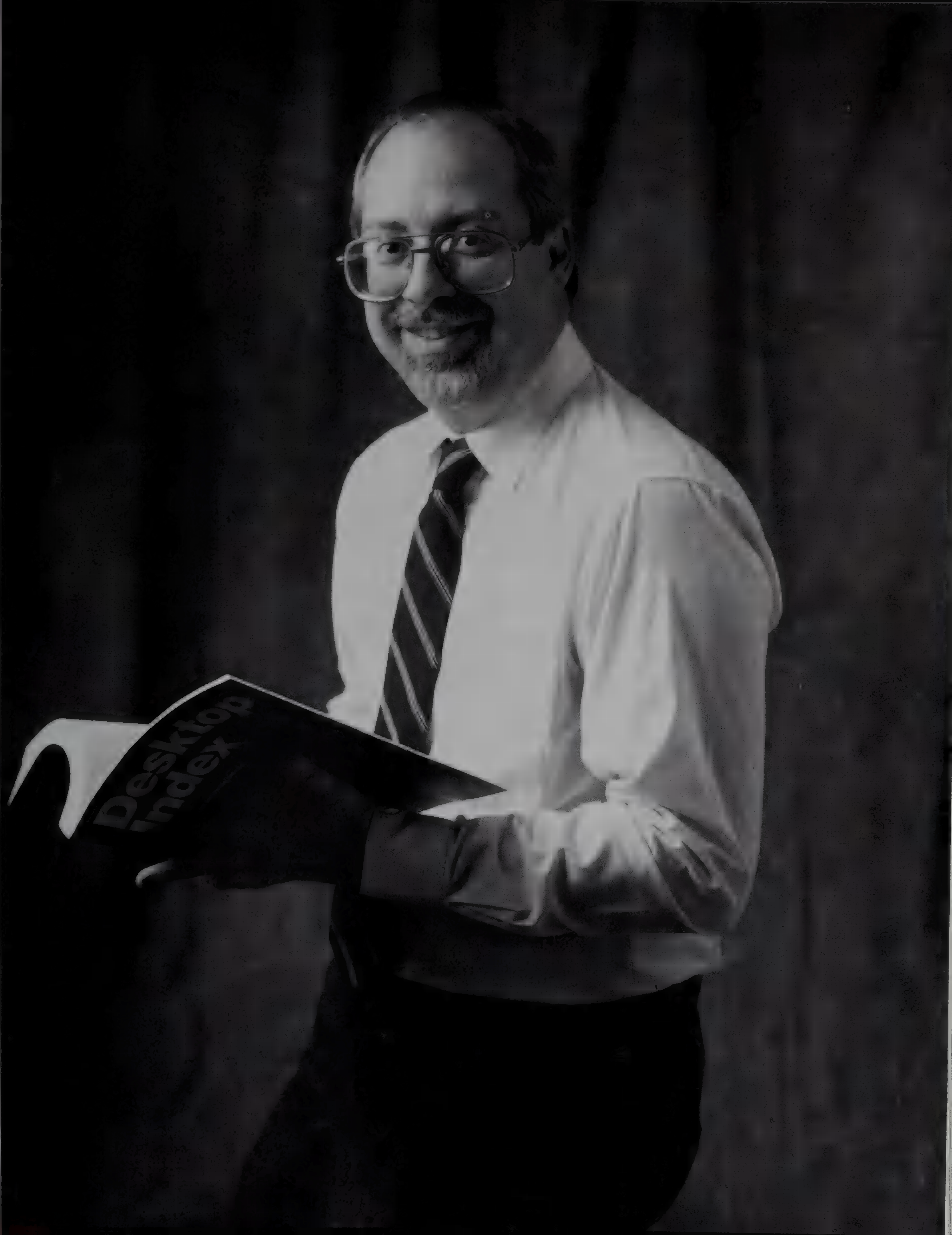
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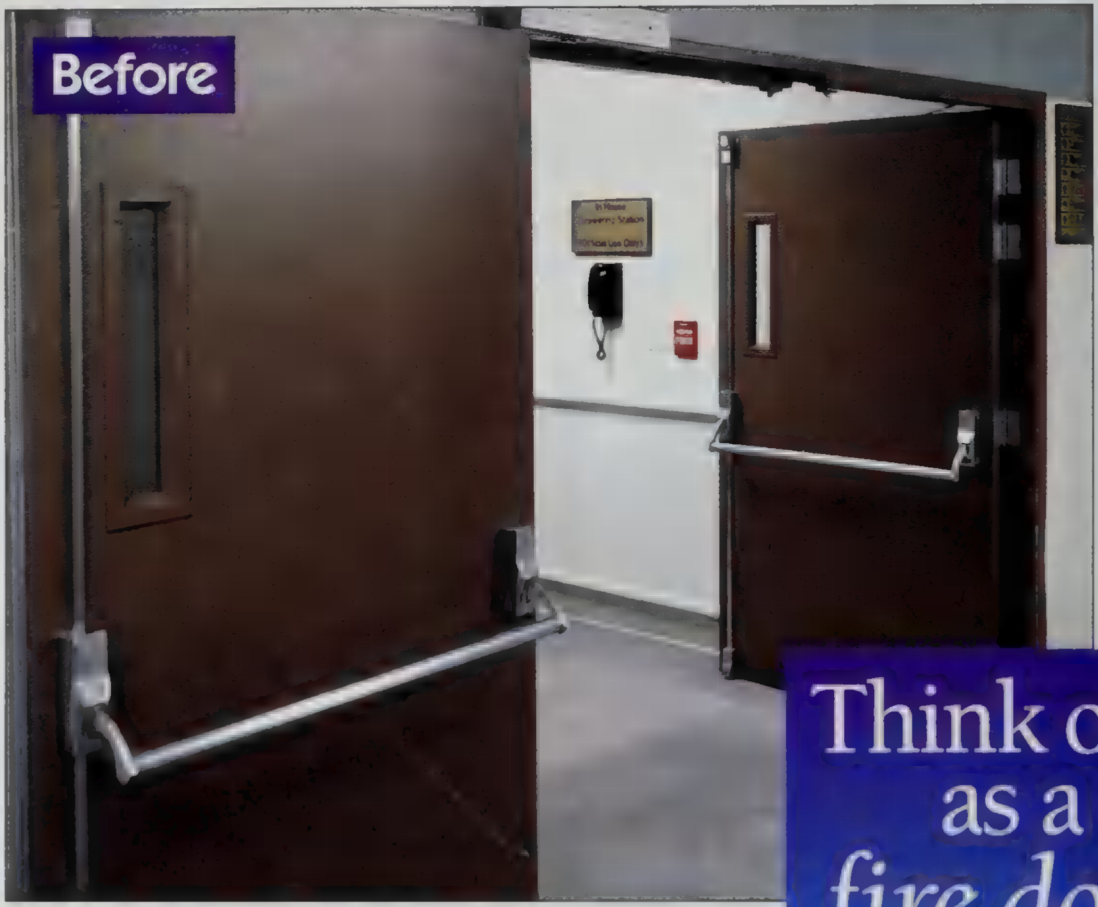

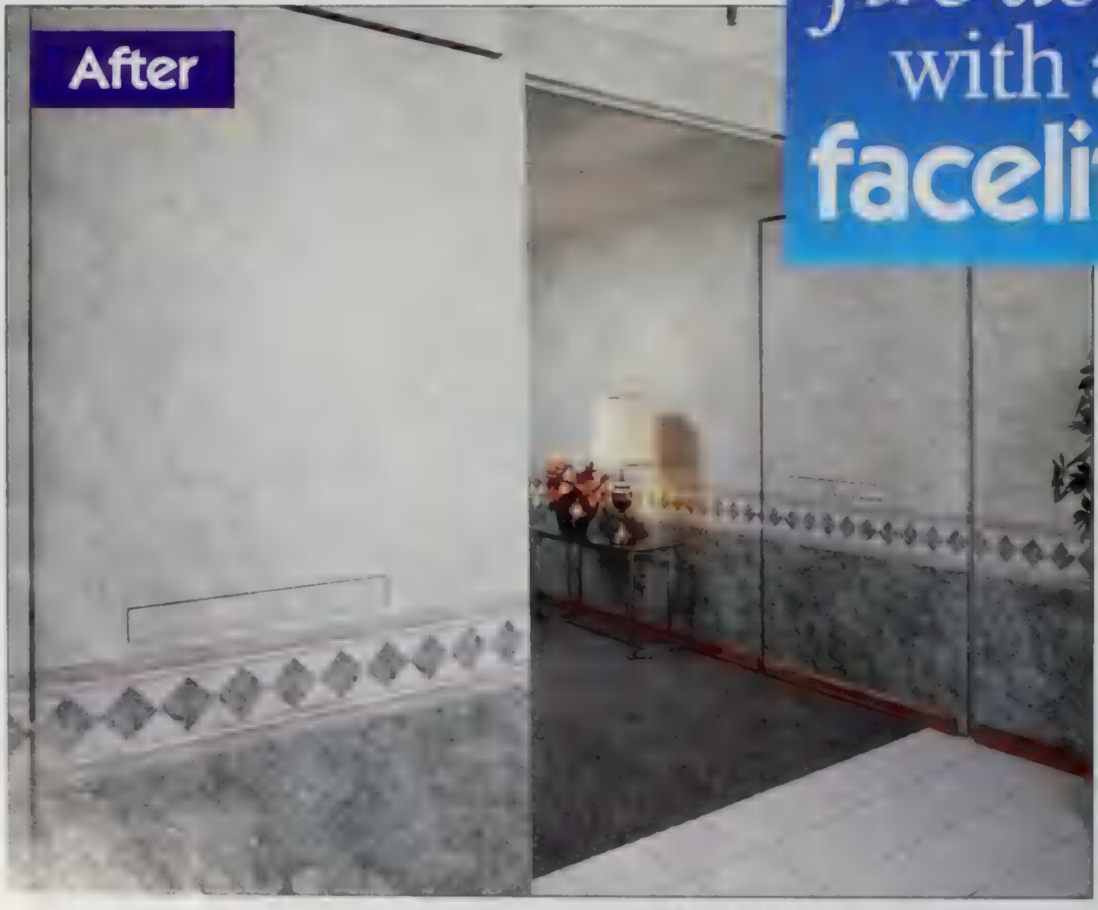

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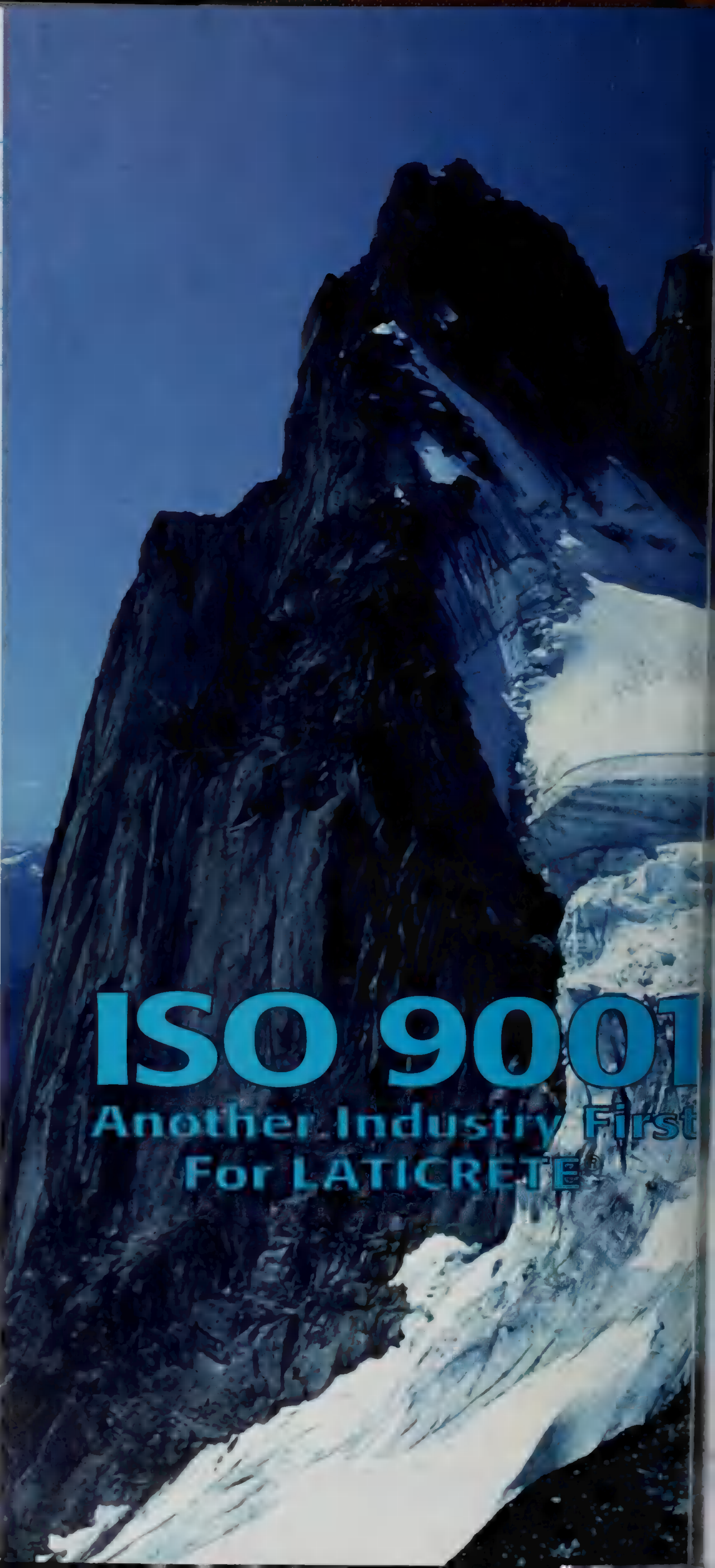


ARCHITECTURAL RECORD 4/1995

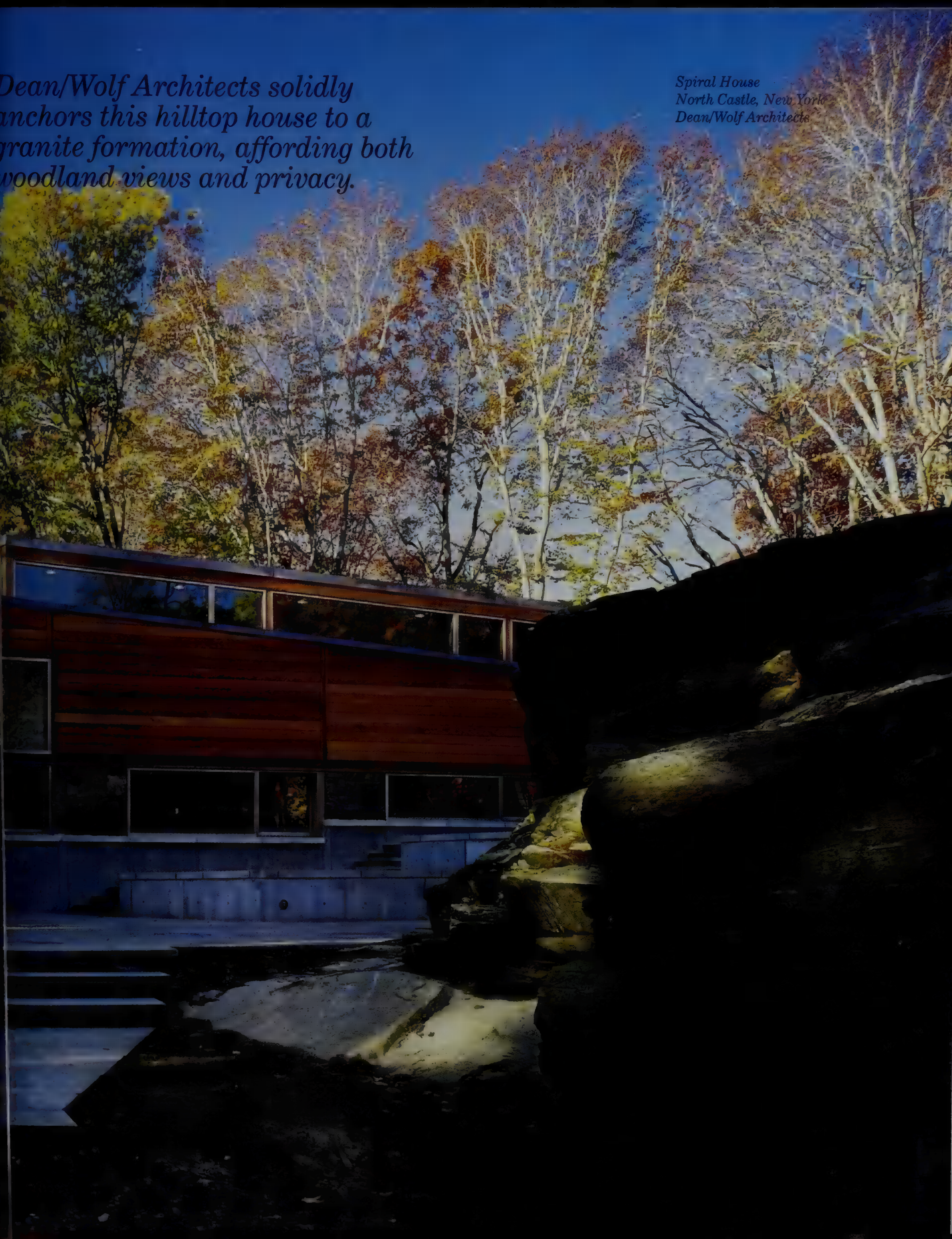
Building Types Study 725/Record Houses 1995

At 40 years old, RECORD HOUSES enters midlife, an appropriate time to take stock. We’ve featured hundreds of houses over the years, and made, it seems, some indelible impressions in the minds of our readers. In fact, last month, of “the 10 contemporary houses that matter most to architects” listed in *The New York Times Magazine*, six had been first published in ARCHITECTURAL RECORD (five were covers). Hardly, we think, a coincidence. It’s too early to predict the influence of this year’s lineup of nine projects, which includes the work of acknowledged masters of residential design—Gwathmey Siegel & Associates (page 74), Franklin D. Israel Design Associates (page 82), and Turner Brooks (page 92)—as well as emerging voices—Frederick Phillips & Associates (page 68), Koning Eizenberg Architecture, (page 88), and Hariri & Hariri (page 96)—and newcomers—Dean/Wolf (page 62) and Judith Sheine (page 70). Of all the designers featured, it is perhaps Ettore Sottsass (page 80), the 77-year-old Milanese architect, industrial designer, and de facto poet, who best sums up the diverse impulses that not only drive architects to constantly reinvent the house (a type that most consumers still prefer in a conventional mode), but also the mission of RECORD HOUSES: “There are moments when you want to go to the piazza and shout, and other times when you need to be more quiet.”
Karen D. Stein

*lanufacturers’ Sources
sted on page 107*

Hitting Bedrock

Dean/Wolf Architects solidly anchors this hilltop house to a granite formation, affording both woodland views and privacy.



Spiral House
North Castle, New York
Dean/Wolf Architects

o many potential buyers, this site seemed impossible. A house *and* its septic-drain fields could occupy only some 10 percent of the three-plus acres because the rest was designated as protected wetlands. That restriction confined the possible site for a building to just one location—on top of a solid-granite dome tight against the rear property line (site plan below). Worse still, the driveway would have to cross a stream—which meant special-permit requirements—and climb up a jumble of craggy ledges—which meant blasting. But a young professional couple with several active pre-adolescents and a love for nature, Andrew and Lisa Greenberg, were intrigued by the site's beauty, including, in addition to the stream and ledges, dense woods containing trees over a 100 years old. Before they made an offer, however, they did what too few clients do. They called in the architect.

As the undaunted team of Kathryn Dean and Charles Wolf walked the difficult terrain with the Greenbergs, they quickly saw that the assets outweighed the deficits. One asset was the granite dome, which forms the highest elevation and offers the best views. Another factor, the proximity to the northern boundary, was not all bad: Across the property line is a manicured golf course offering protection against incursion by future houses going up too close by. On the south side, however, where the stream comes closest to the building site, the owners can enjoy the view against a background of dense trees shielding the public road beyond.

On the spot, clients and architects decided to focus the primary view towards woods and stream, and to turn a relatively blind entry side (opposite and previous pages) toward the golf course. Soon after, the Greenbergs approved Dean and Wolf's basic parti: an organizing spine for the spaces within and without, using angled walls on the entry side to form an upward-reaching spiral. The incline of the driveway, where it ends at a U-turn, carries through in the angle of flanking concrete screen walls (top right), which gradually rise from the ground to meet the house. There, the ascent continues along the top of a cedar-clad screen wall above the first floor (previous pages), then under the second-floor windows (left), where it terminates in a tall stone-faced fin wall. The building plan widens in tandem with the spiral's height (overleaf) so that the spaces inside flow horizontally, giving a forced-perspective view from the entrance door. They also flow vertically toward the sky through light wells enclosed with polished plaster walls that pass through the second floor, emphasizing the focus above.

Although the design went quickly, the following stages did not. Approvals by various authorities to cross wetlands and alter site contours took a year. Sitework called for highway-construction blast-borer equipment to place some 1,000 pounds of dynamite as the machines climbed ledges on heavy tracked rollers to build the driveway and ultimately to create a level area on the granite dome for a building site. (Some of the stone was salvaged for exterior facing, but plans to surface all the exterior as well as the living-room floor and fireplace with stone had to be abandoned because the cost of setting it was too high.) One bonus was that concrete first-floor walls could be poured directly on the newly created granite surface. The owner took responsibility for subcontracting site preparation and foundations, a process that Wolf says worked well. But he adds: "There has to be a clear understanding of responsibilities." (While he declines to discuss the cost of this 6,100-square-foot house, he cites the case of another client who handled all subcontracting, saving 20 percent of estimated costs.) After the concrete, came a steel-frame structure for the second floor and, finally, finishes, including windows framed in marine-grade teak outside and ash within. *Charles K. Hoyt*

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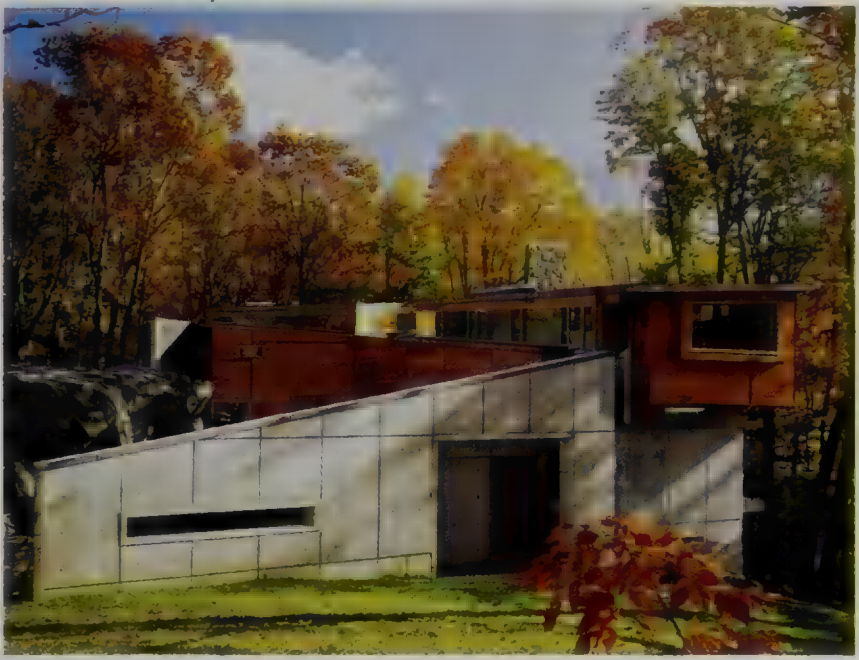
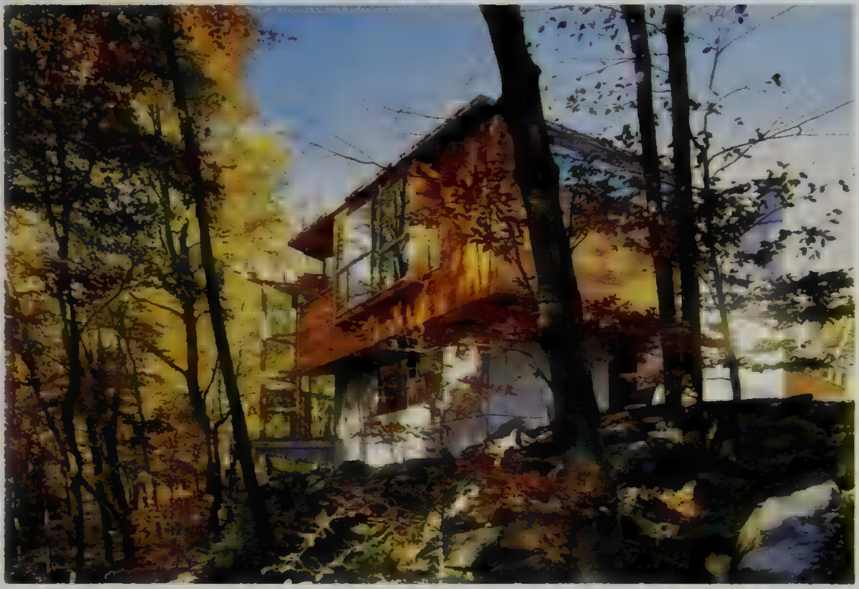
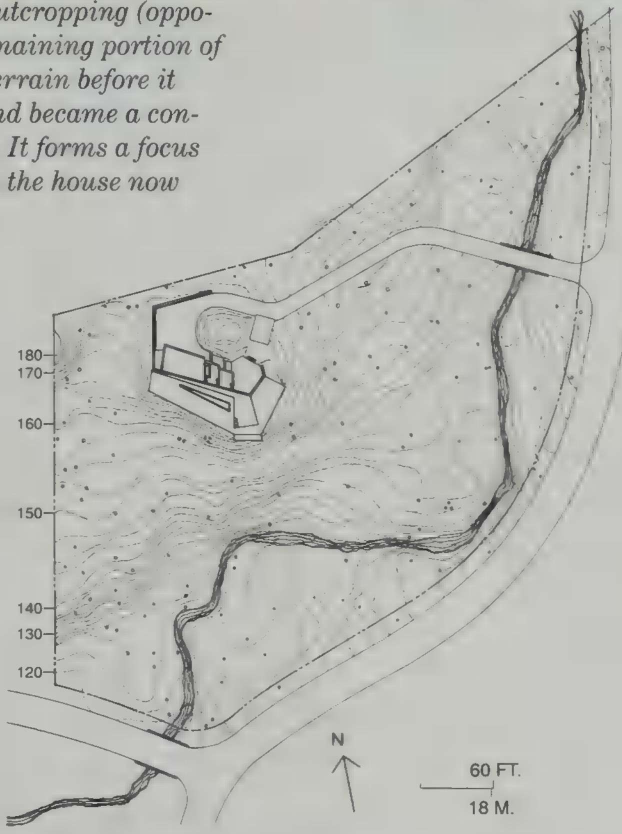
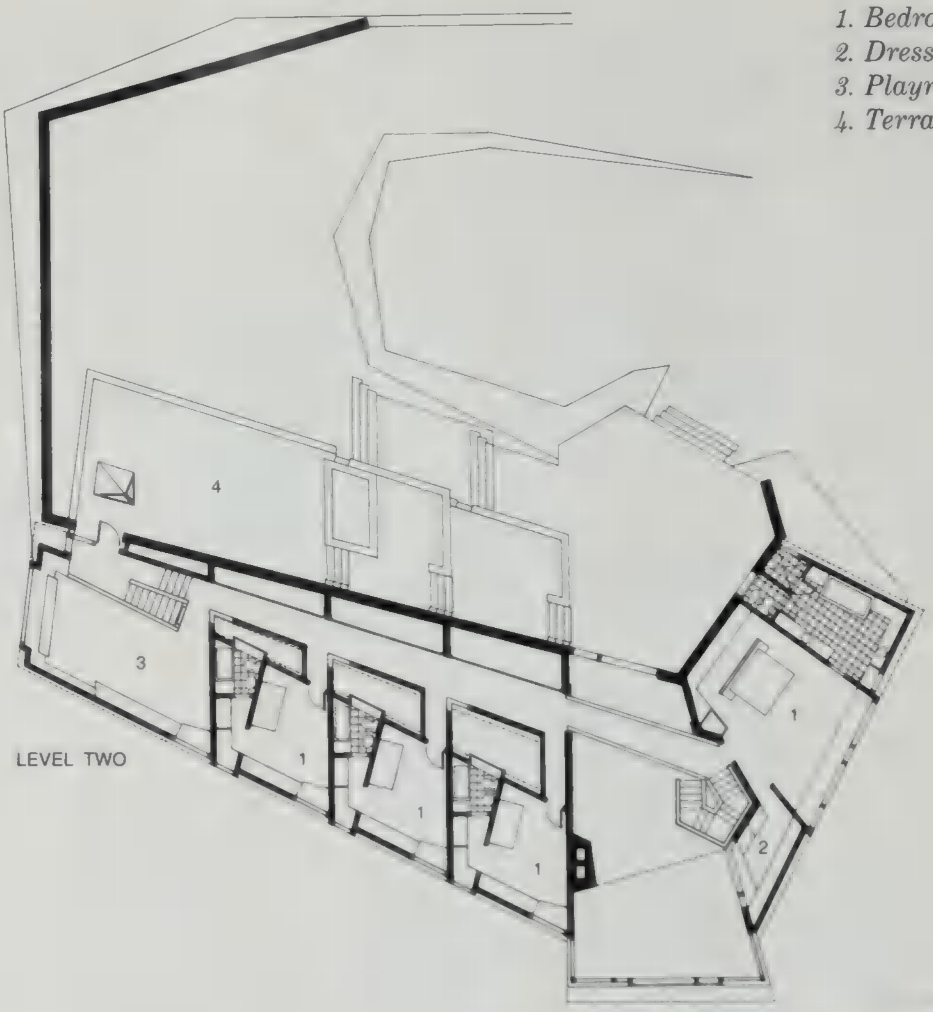


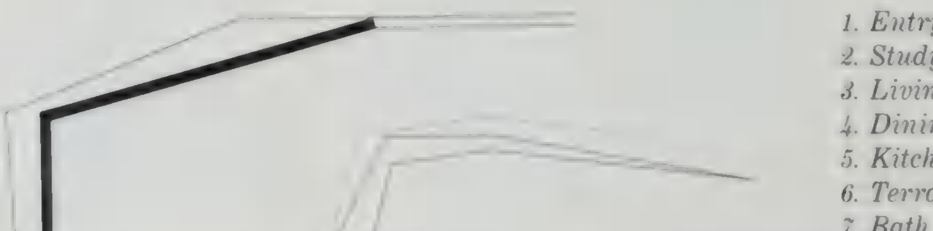


The granite outcropping (opposite) is the remaining portion of the original terrain before it was leveled and became a construction site. It forms a focus around which the house now turns.





1. *Bedroom*
2. *Dressing room*
3. *Playroom*
4. *Terrace*



1. *Entry*
2. *Study*
3. *Living room*
4. *Dining room*
5. *Kitchen*
6. *Terrace*
7. *Bath*
8. *Utility*
9. *Laundry*
10. *Garage*

"There isn't a right angle in the place," says Charles Wolf in only a slight exaggeration. Considering the angled walls and roofs that slope in two directions—laterally for drainage and longitudinally to express the design parti—the joint connections in the house's concrete-and-steel construction had to be flexible.

A forced perspective created by converging walls can be seen in the upstairs hall (opposite left). Here, the walls around skylit wells to the floor below (opposite) also slope. Small glazed windows in these walls provide acoustic privacy to the living area when the owners' children make noise.

All interior trim is ash and the wood floors are white oak stained with a water-based finish that prevents yellowing in the abundant sunlight.

The end of the living room (opposite) is cantilevered 14 feet out from a cliff to bring stream views closer. Concrete transverse fin walls along the north wall (plan) provide lateral structural support and are hidden from view outside by cedar screen walls that carry the slope of the upward-spiral parti .

Credits
Spiral House
North Castle, New York
Owners: *Dr. Andrew and Lisa Goldberg*
Architect: *Dean/Wolf Architects—Kathryn Dean, Charles Wolf, partners-in-charge*
Engineer: *Anchor Consulting (structural)—Evan Akselrad, partner-in-charge*
Consultant: *Reginald Hough (concrete)*
General Contractor: *Einar Moi*

Chicago Shotgun

The comparatively spacious 40-foot-wide double lot architect Frederick Phillips had as a starting point for a doctor's residence presented a challenge: how to preserve the scale and rhythm of a neighborhood of narrow houses built on 20-foot-wide lots. "The temptation would be to cover the whole lot with one structure that would present a cube-shaped barrier to the street," says Phillips. Instead, he designed a narrow ground- and split-face concrete block shotgun-like house for the west half of the lot. With the exception of a garage at the rear of the site, and the structural-steel framed porch and bedroom tower, he left the east half of the lot open for use as a garden.

The steel porch and bedroom structure was carefully detailed. "I had made several trips to South Carolina, and had become familiar with some masonry houses, with post-and-beam porches on the sides to catch the prevailing breezes. Visually, we wanted the porch to feel light; to be something that says the light structure is there to be a filter for breezes."

Another challenge for Phillips in this transitional neighborhood, where gangs are active, was meeting his client's need for security and secure access for patients. Three parking spaces were provided inside the rear garage, so that patients can park inside the building, and few windows were provided on the first floor. Security gates were installed at some vulnerable entry points on the second floor. *Charles Linn*

Credits
Private Residence
Chicago, Illinois
Architect: *Frederick Phillips & Associates—Frederick Phillips, design principal; Ronald Piekarz, project architect; Brian Buczkowski, production architect*
Engineer: *Stearn Joglekar*
General Contractor: *Frederick Phillips & Associates*

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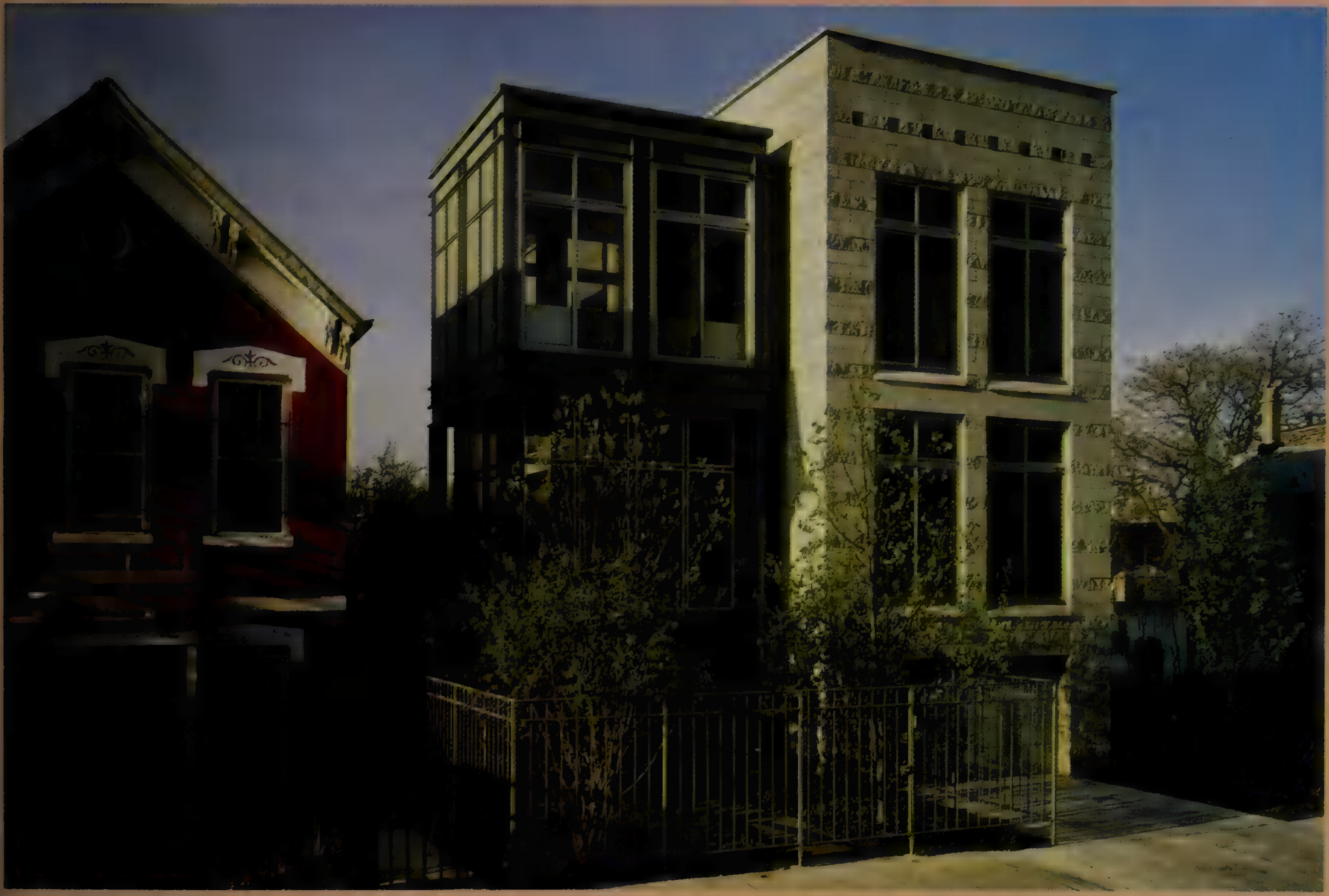
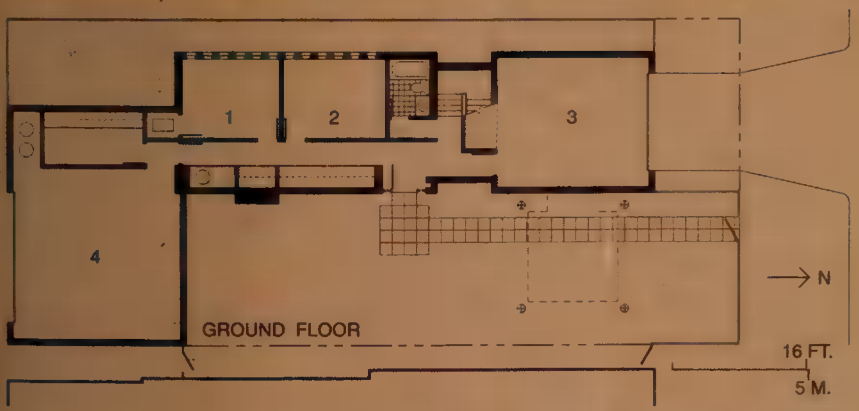
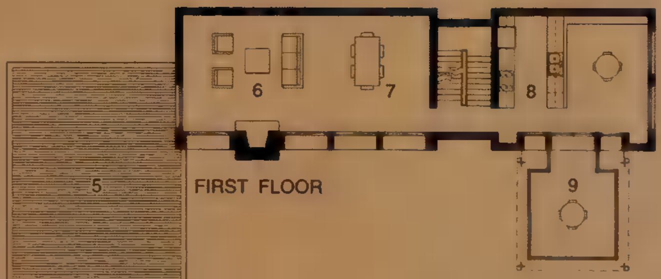
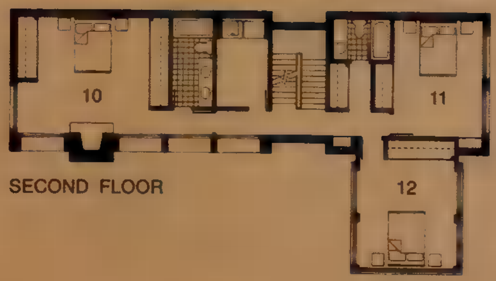
Private Residence
Frederick Phillips & Associates,
Architect
Chicago, Illinois





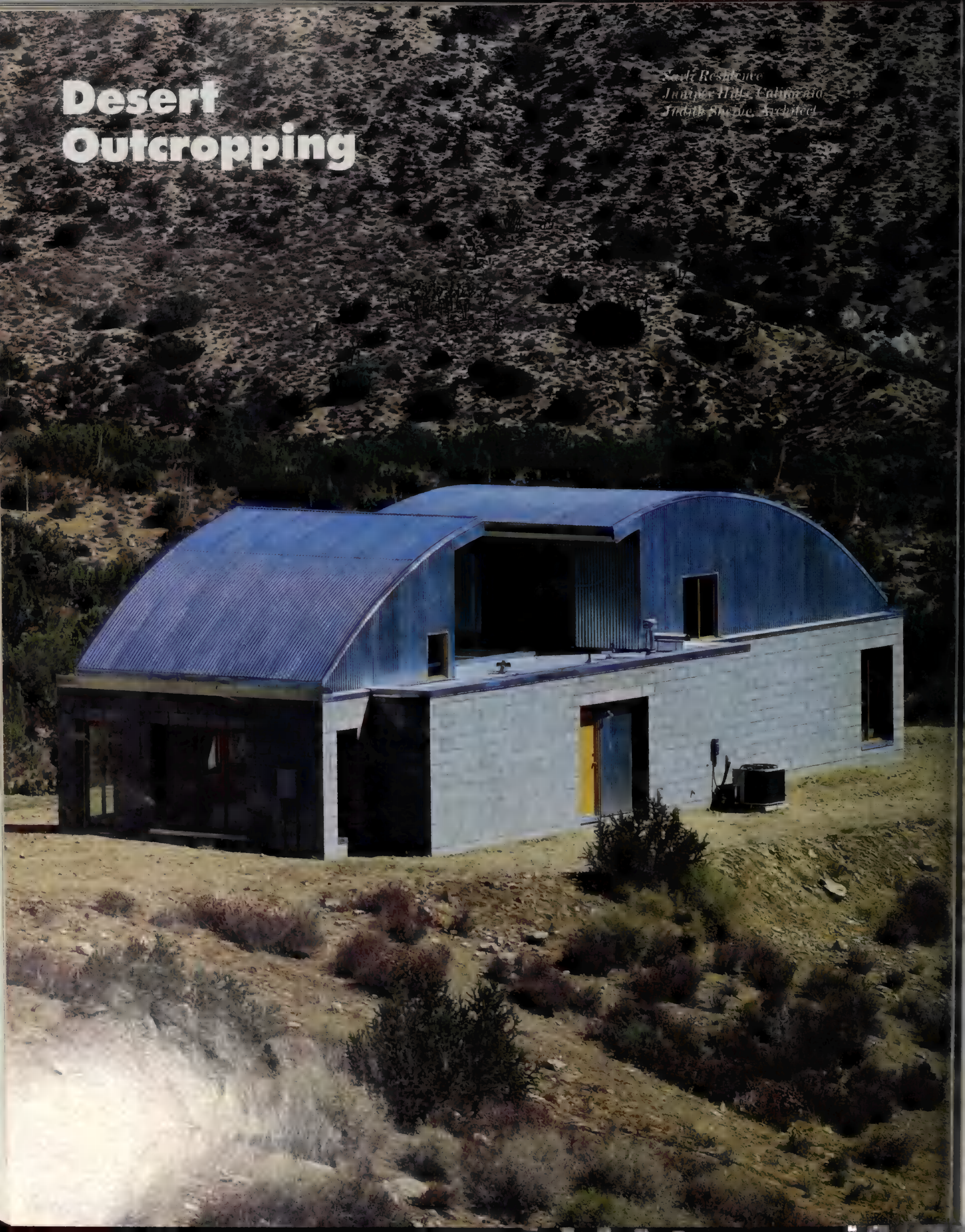




1. Storage
2. Office
3. Garage
4. Garage
5. Deck
6. Living room
7. Dining room
8. Kitchen
9. Porch
10. Master bedroom
11. Bedroom
12. Bedroom

Desert Outcropping

Seidl Residence
Juniper Hills, California
Judith Sheine, Architect



nly an hour and a half northeast of Los Angeles, in the foothills of the San Gabriel Mountains and on the way to the Mojave Desert, lies Juniper Hills, a world apart. Here, at an elevation of 4,200 feet, John Sarli, a mathematician and avid outdoorsman, purchased five acres of rolling terrain to satisfy both vocation and avocation—contemplation and intense athletic activity. He asked Judith Sheine, a friend from college, an architect and currently a professor at UCLA and Cal Poly, Pomona, to build him, in his words, "a crystal-like structure, a gem in the desert."

Sheine, a self-proclaimed disciple of Rudolph Schindler (and co-editor of a recent book on Schindler's work and writings, published by Academy Editions) has absorbed many lessons from the master—most notably, faith in a flexible four-foot module that could be sub-divided or multiplied and, because of Schindler's training as an engineer, his vision of himself as an "artist-builder," according to Sheine. These traits are in evidence in her first completed house.

The architect placed the structure on an existing narrow promontory near the middle of the site, flanked by steep drop-offs ideal for drainage. Set at 45 degrees from due north, the profile of the curved metal roof split into two uneven pieces gently echoes rolling hills that loom in the distance, while giving the effect of an alien vessel. Says Sheine of the striking form and choice of materials: "It's like a *Barbarella* spaceship. Hard on the outside and soft on the inside." Indeed, the steel roof decking set atop 16-inch-thick load-bearing perimeter walls (4 inches of rigid insulation sandwiched between an 8-inch-wide concrete block and 4-inch-wide exterior face block) contrasts with the soft yellow sheen of the birch-veneer plywood lining that rises from 8 feet 8 inches above the block to the 16 foot 8-inch centerline of the curved main vault (following pages).

Like Schindler, Sheine, a former student of mathematics, based the proportions of the main spaces on a four-foot module: the 16-foot-wide nterior space is divided into three sections: a 12-foot-long bedroom; a 20-foot-long kitchen and bathroom block organized around a three-sided courtyard; and a 28-foot-long living/dining room. Lofts suspended from the roof decking by 1/4-inch steel cables provide additional sleeping/reading space at both ends of the house. Steel beams are highlighted by a red primer coat that acts as a paint color similar to San Francisco's Golden Gate Bridge), reinforcing the reddish hue of custom-designed Douglas fir window frames.

Located in an active earthquake zone, the structure withstood he strong vertical shear of the 1994 Northridge earthquake. The materials, however, are not immune to the elements. Harsh sunlight rapidly discolors window frames and the metal roofing expands and ontracts depending on daylight, emitting muffled expansion creaks as the sun emerges in the morning. Says Sarli of his new home: "It's an alarm clock." *Karen D. Stein*

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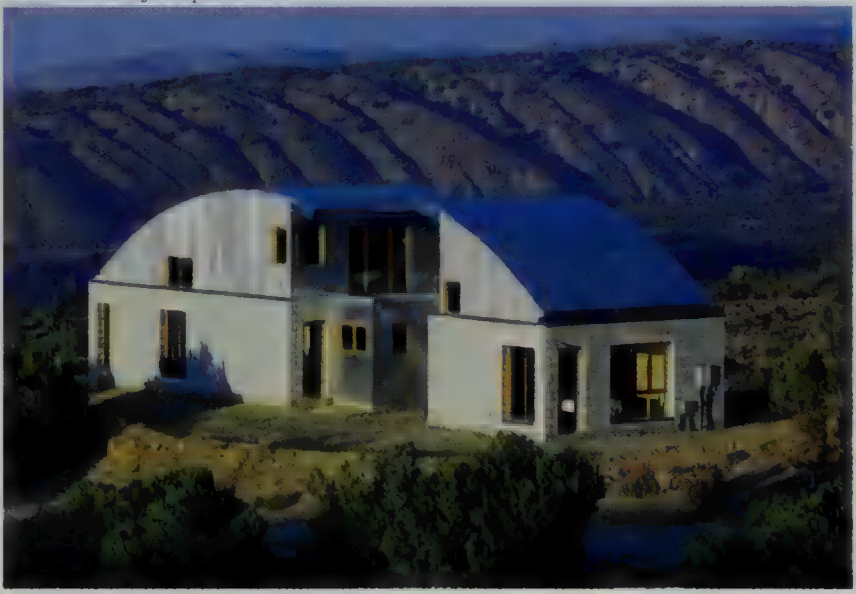
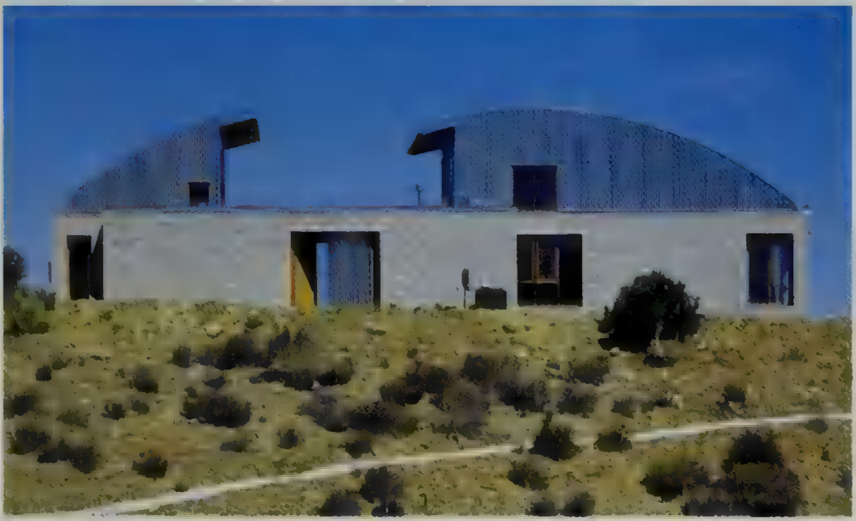
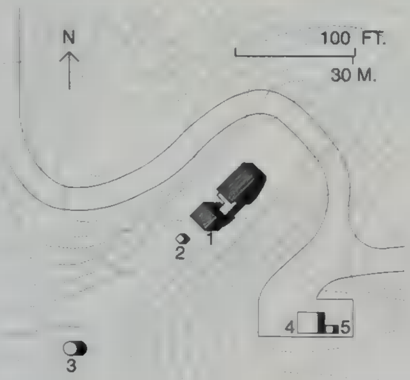
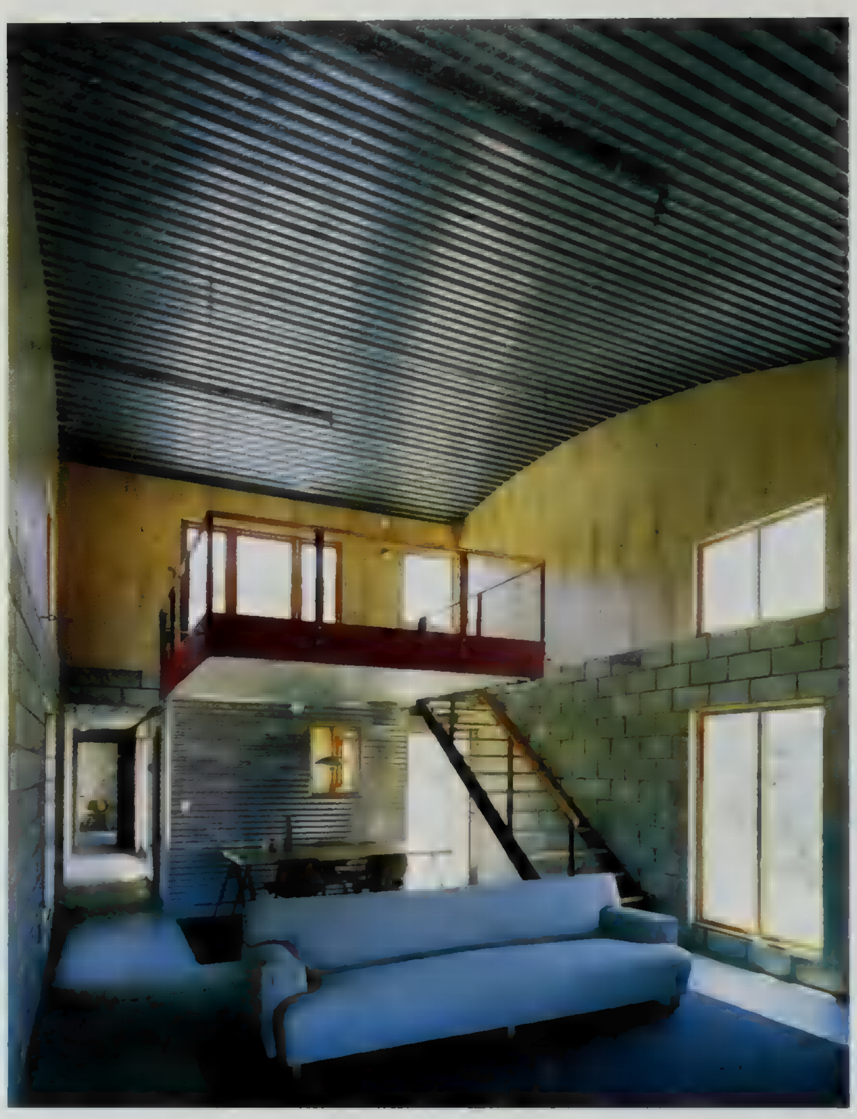


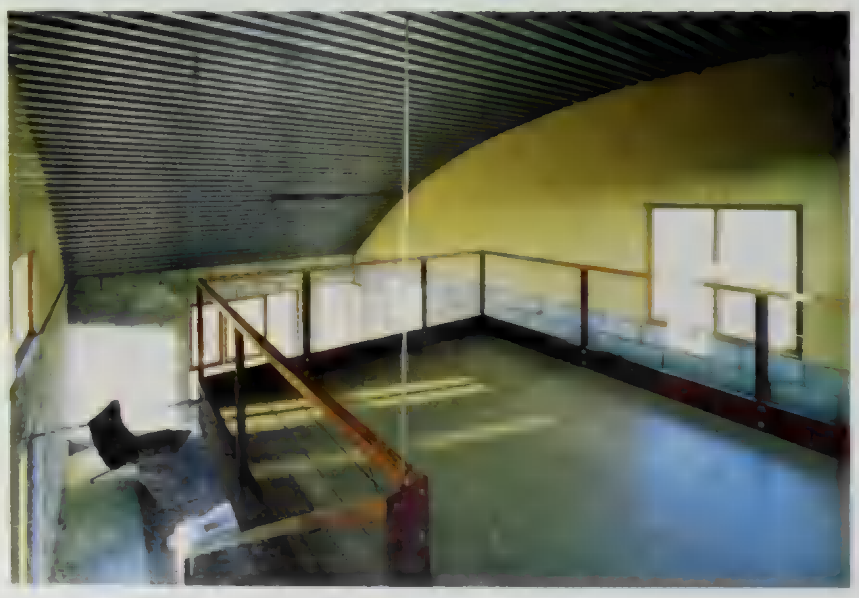




The house sits on a plateau atop the hilly five-acre site; its length runs northeast to southwest. Future plans include a terraced path between house and garage.

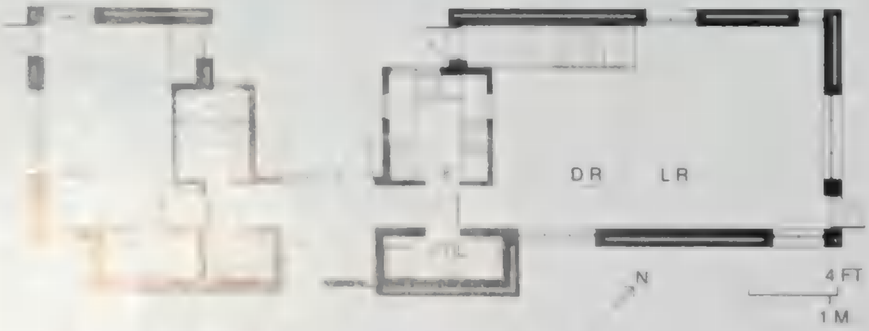
1. *House*
2. *Pump house*
3. *Water tank*
4. *Garage*
5. *Well house*



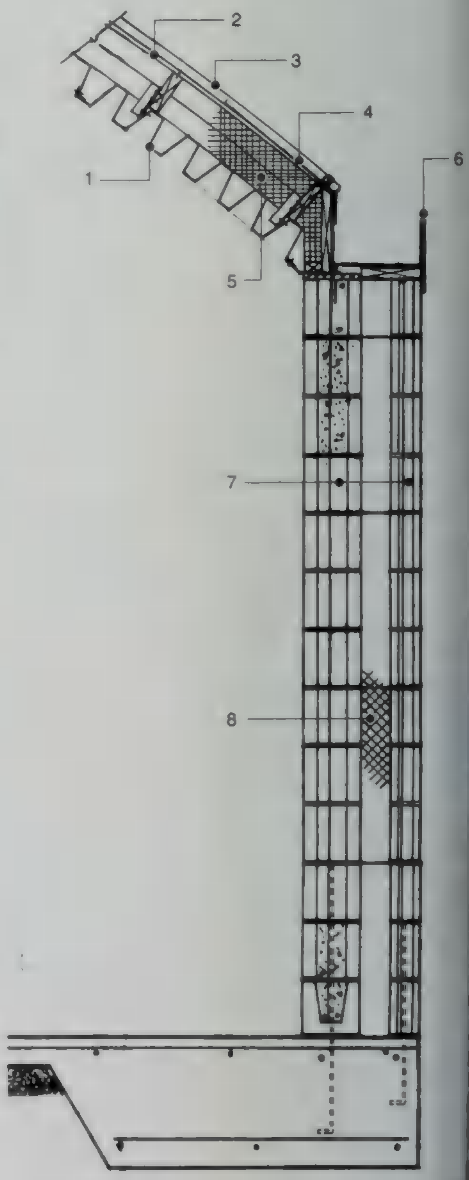


Steel decking on the ceiling is 18-gauge and 4 1/2-inches deep, allowing room to recess sprinklers. On the bottom of the loft it's 16-gauge and 3-inches deep. The dining room wall is clad in corrugated steel with a subtle leaf-like pattern from the finishing process. Above the 8-foot 8-inch-high concrete block walls, birch veneer plywood panels are screwed to metal studs.

Credits
Sarli Residence
Juniper Hills, California
Owner: *John Sarli*
Architect: *Judith Sheine, Architect*
Engineers: *Gerald Sheine and Nancy Hamilton*
General Contractor: *Joseph T. Setter*



1. 18-gauge structural steel decking
2. 1/2-inch plywood
3. 20-gauge corrugated steel roofing
4. Torch-applied roofing
5. Rigid insulation
6. Gutter formed from steel
7. Concrete block
8. Rigid insulation



PERIMETER WALL SECTION

Living With Art

On a hill overlooking Lake Zurich, this large house mimics a small village.

[illegible]

[illegible]

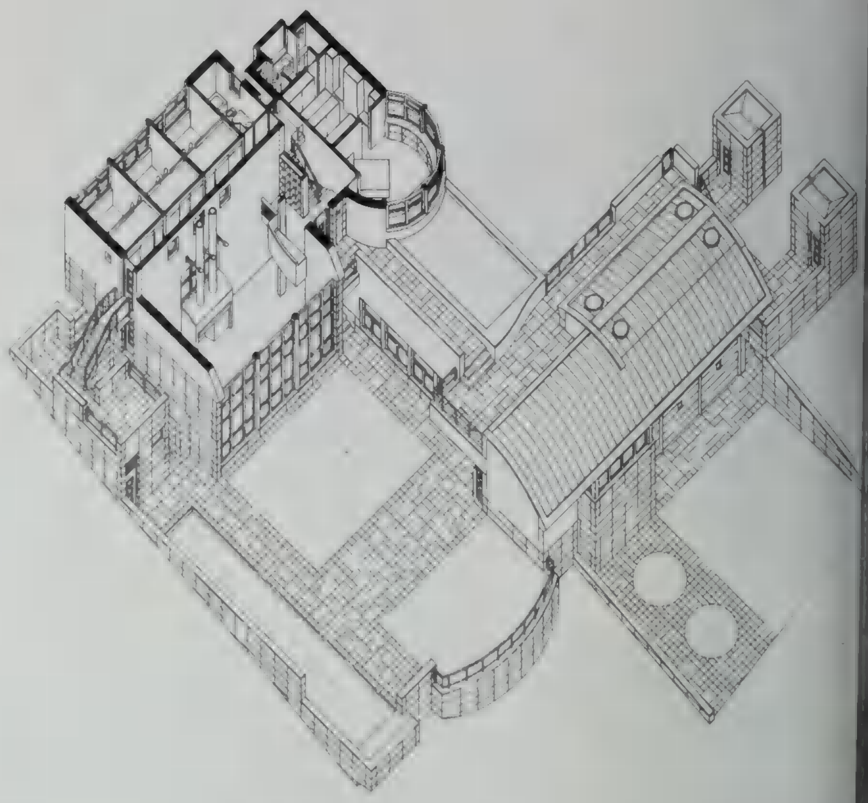
[illegible] & [illegible]

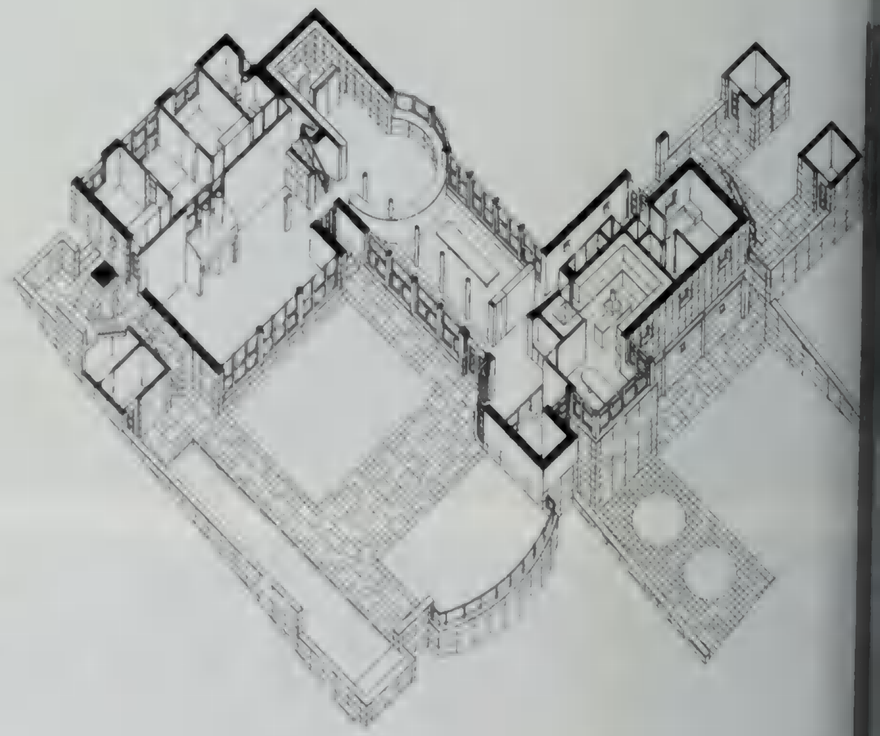
On a gently sloping hill overlooking Lake Zurich stands a house Gwathmey Siegel designed for a large family and an equally large modern art collection that the family regards as an integral part of its domestic surroundings. The commission required the architect to fit an ambitious program onto a site governed by the restrictive Swiss building code, which not only limits height and mass, but also requires the construction of a stick mock-up so that townspeople can judge the design for themselves. In return, the commission provided an opportunity to make spaces at once intimate and museum-like.

In this case, the house was conceived of as a succession of interlocking interior and exterior spaces. A series of terraces and gardens extends the building into the landscape and integrates it with the site. Says partner-in-charge Charles Gwathmey: "Previously we approached the house as a single object. But when the program expands, do you simply build a bigger object, or do you work from a fundamentally different idea?" To reduce the impact of 10,225 square feet, Gwathmey's scheme became the "house as village," where the arrangement of components is determined both by the program and the changing topography of the site. Set back into the hill, the true extent of the "village" is only revealed at close quarters, in a gradually expanding sequence of sculptural white fragments with lead-covered vaulted roofs.

From the street, the south-facing front facade, standing two and a half stories high, echoes the retaining walls characteristic of Zurich. Rooms are grouped into two main wings, connected by the dining room. A raised cylinder adjacent to the library accommodates a reading room and, one floor up, the master bedroom. This space, the only round element in the design, acts as a hinge between the relatively public and more private areas of the house. Behind the living room is the split-level children's wing and the family stair, parallel to the full-height stair that extends through the front of the house.

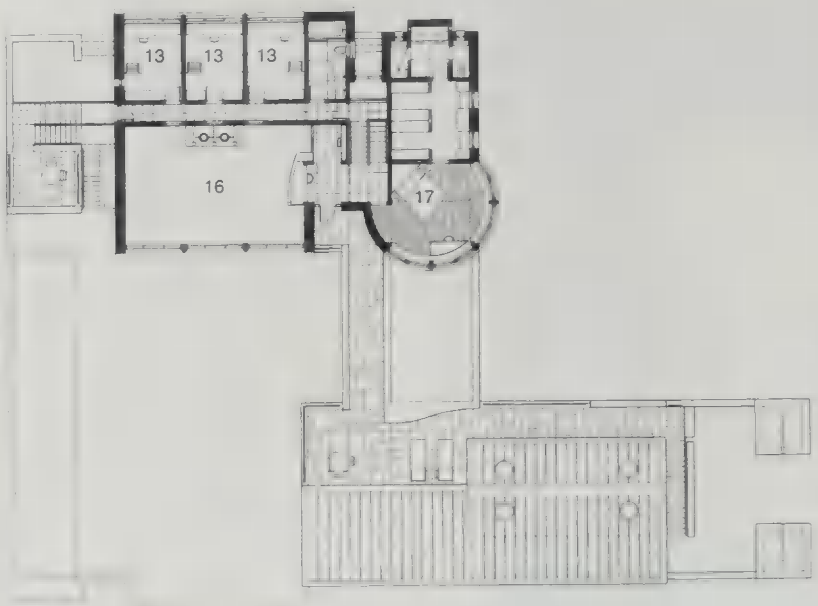
The living room, where domesticity and art meet, is the most striking space in the house. Twenty-four-feet high with a glazed south face, the room is dominated by a powerful, target-shaped work of specially commissioned art painted on the west wall by Richard Long (following pages). The restricted choice of materials helps link the fragmented volumes, in sharp contrast to the more traditional shingle-roofed and wood-walled neighboring houses. "Poured concrete construction gives a physical and psychological sense of density and permanence," says Gwathmey. Introverted and somewhat aloof, the house is a miniature hill town that opens upon itself, with the main terrace and pool in the role of town square. Ultimately, the liveliness between spaces is subordinate to the overall effect of this residence-cum-gallery—the sense of tranquility and intensity, of calm and concentration. *Tracy Metz*



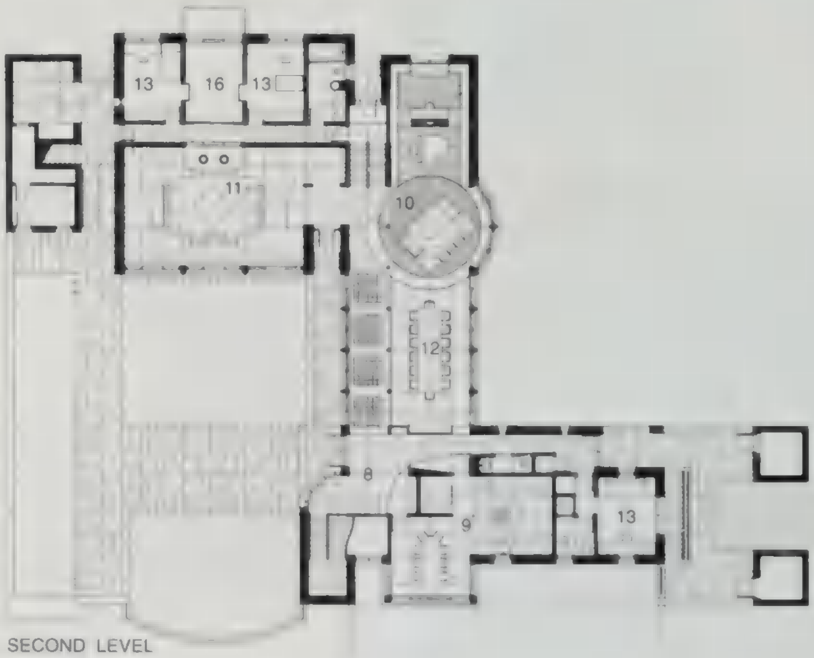


Rooms are grouped into two main wings connected by the dining room. Set back on the sit is the double-height south-facing living room, overlooking the terrace (top axonometric). Behind is a passageway to the children's wing, which contains bedrooms and a recreation roo The cylinder contains the librar on the ground floor (bottom axonometric) and part of the master-bedroom suite above.

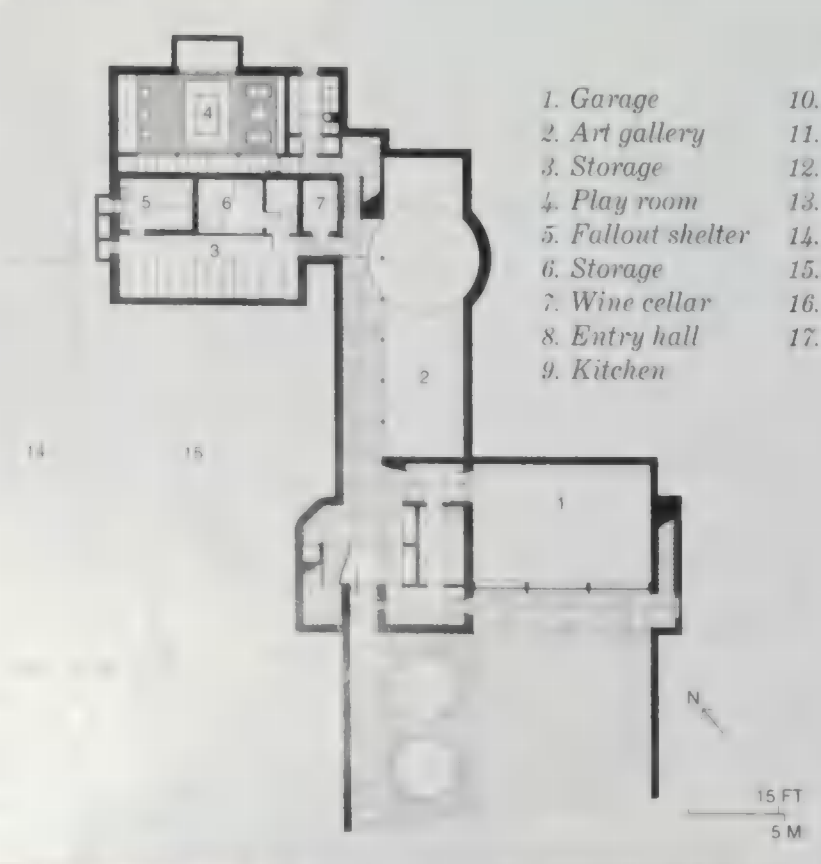
©Richard Bryant/Arcaid photos



THIRD LEVEL



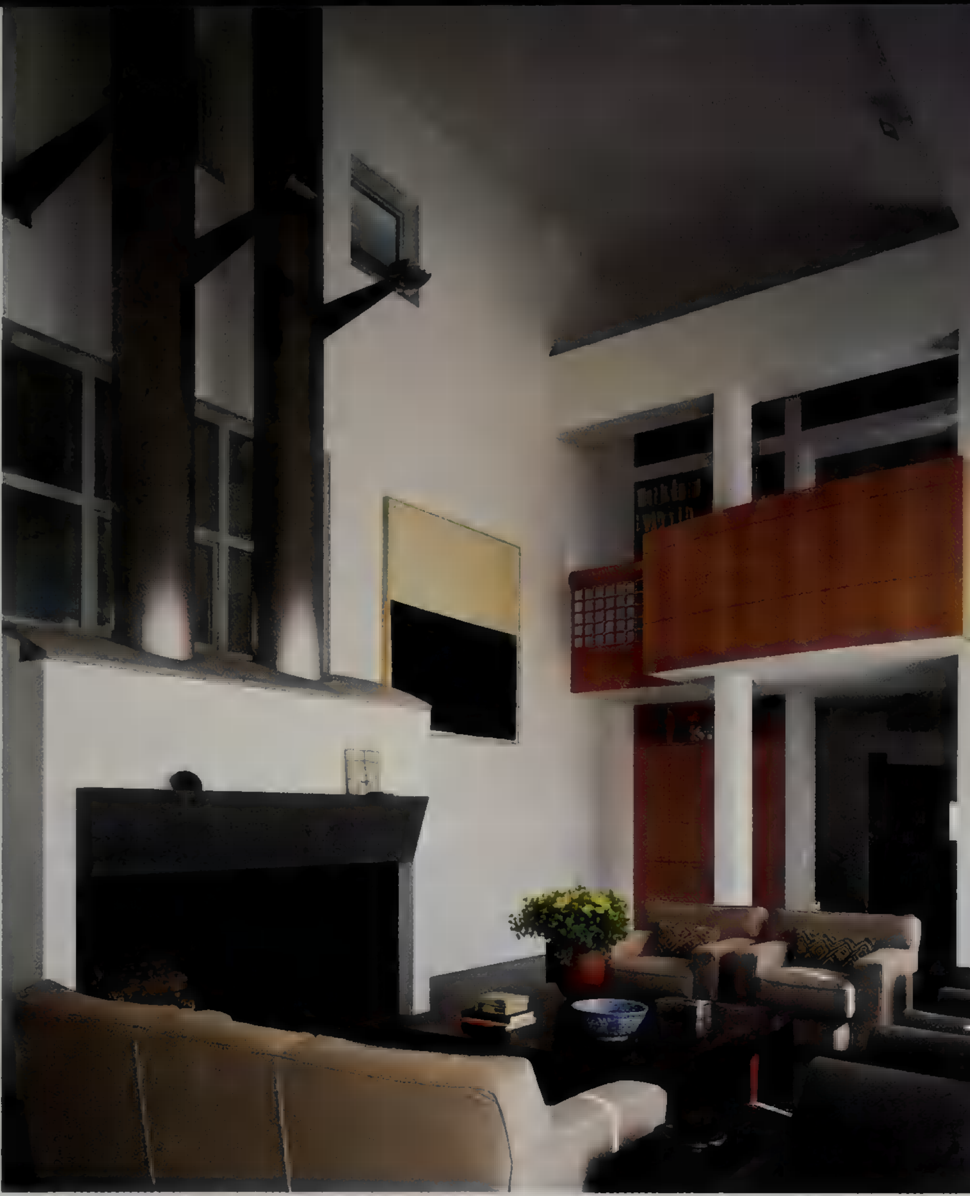
SECOND LEVEL



1. Garage
2. Art gallery
3. Storage
4. Play room
5. Fallout shelter
6. Storage
7. Wine cellar
8. Entry hall
9. Kitchen
10. Library
11. Living room
12. Dining room
13. Bedroom
14. Swimming pool
15. Sculpture terrace
16. Open to below
17. Master bedroom

Cabinets in a reddish Swiss wood resembling beech add warmth to the interior. The robust yet elegant design of the fireplace echoes the combination of planes and vaults that characterize the complex as a whole (opposite top left and right). Daylight into the lower-level art gallery is filtered through a glass brick ceiling (opposite bottom left). Pre-cast concrete columns (part of the structural system, which also includes cast-in-place concrete walls and floors and load-bearing clay block partition walls), line the dining room (opposite bottom right).

Credits
Zumikon Residence
Zumikon, Switzerland
Architect: *Gwathmey Siegel & Associates Architects—Charles Gwathmey, principal-in-charge; Bruce Donnally, associate; Nancy Clayton, project architect; Tom Lewis, Sylvia Becker, Carole Iselin, project team*
Associate Architect: *Pfister + Schiess Architekten—Thomas Pfister, Rita Schiess, principals-in-charge; Daniela Staub, project architect; Heinz Aebi, construction supervisor*
Engineers: *Winiger-Kränzlin + Partner (structural); Ernst Burkhalter Ing. (mechanical)*
Consultant: *Carl Hillmann Associates (lighting)*
General Contractor: *Heinrich Schlumpf*



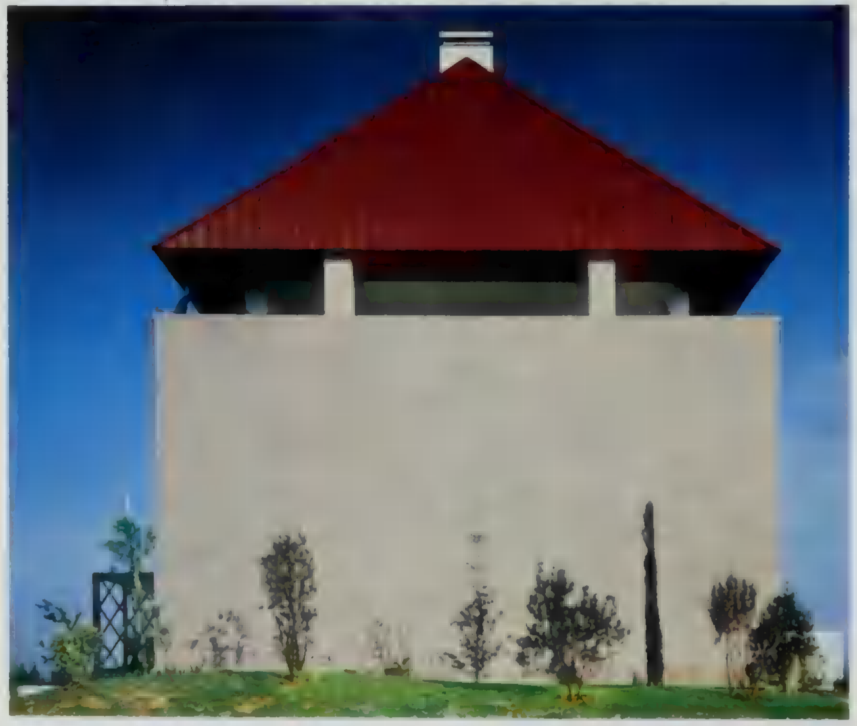
Speaking Softly

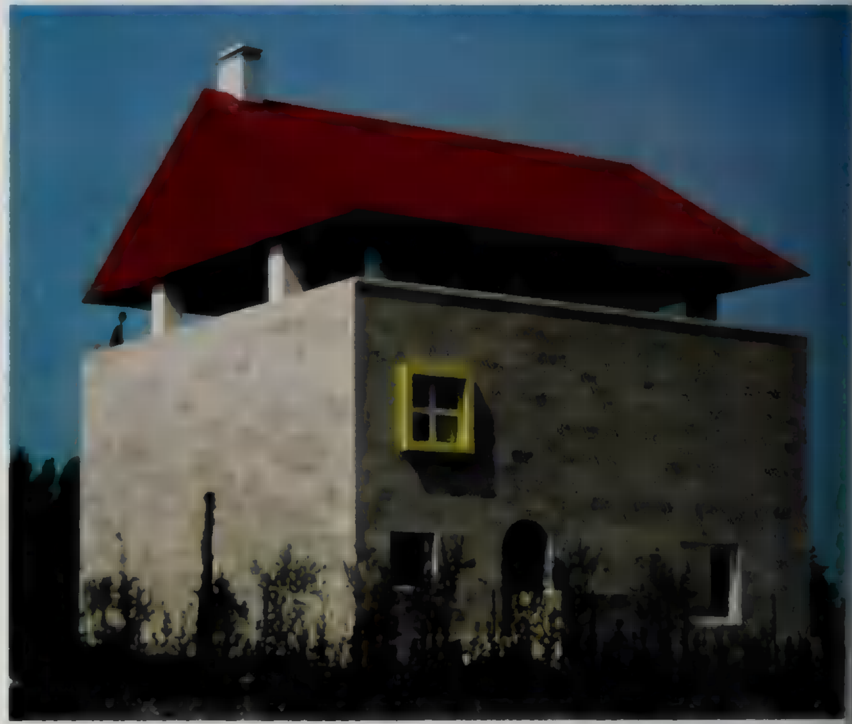
Having contributed some of the more colorful and energetic designs of the roaring 80s—from his Memphis furniture to his showrooms for Esprit—Ettore Sottsass is in a different mood these days. "There are moments when you want to go to the piazza and shout," explains the Milan-based designer, "and other times when you need to be more quiet." While designing the Casa Cei, a 4,800-square-foot house for a family of four in Tuscany, Sottsass felt the pull of ancient traditions and let them help shape the building.

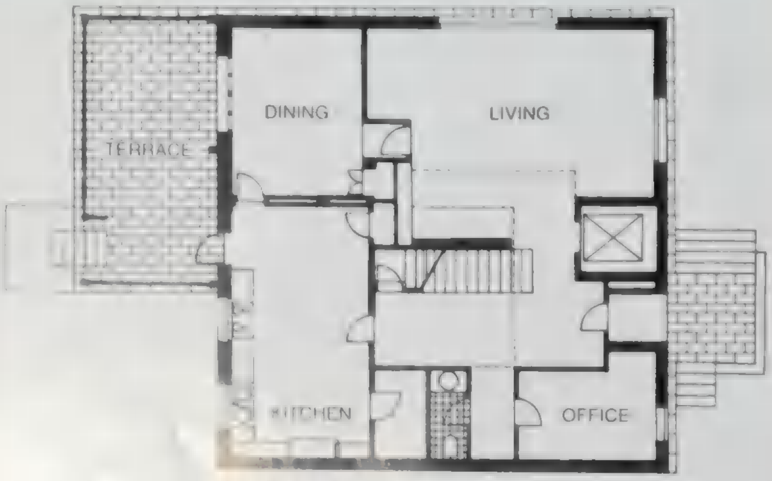
As a result, Casa Cei is an exercise in simple geometry: a cubic form clad in white Istrian stone, topped with a red metal roof, and surrounded by an unpretentious garden. "Tuscan architecture is very compact, dignified, symmetrical," says Sottsass. "Houses here have a sense of mystery and silence, like a de Chirico painting." Any trace of menace at Casa Cei, though, is dispelled by the light touch of Sottsass and his associates Marco Zanini and Mike Ryan in the colorful frames surrounding windows and a balcony. "The windows are toys glued onto the Classical white box," explains Sottsass.

Designed for a middle-class family with traditional Italian ways

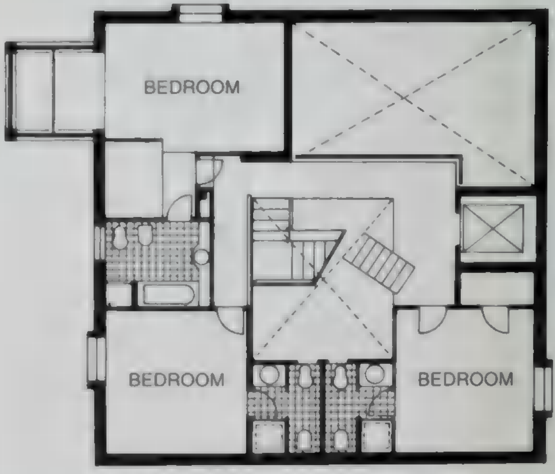
© *Santi Caleca photos*







FIRST FLOOR

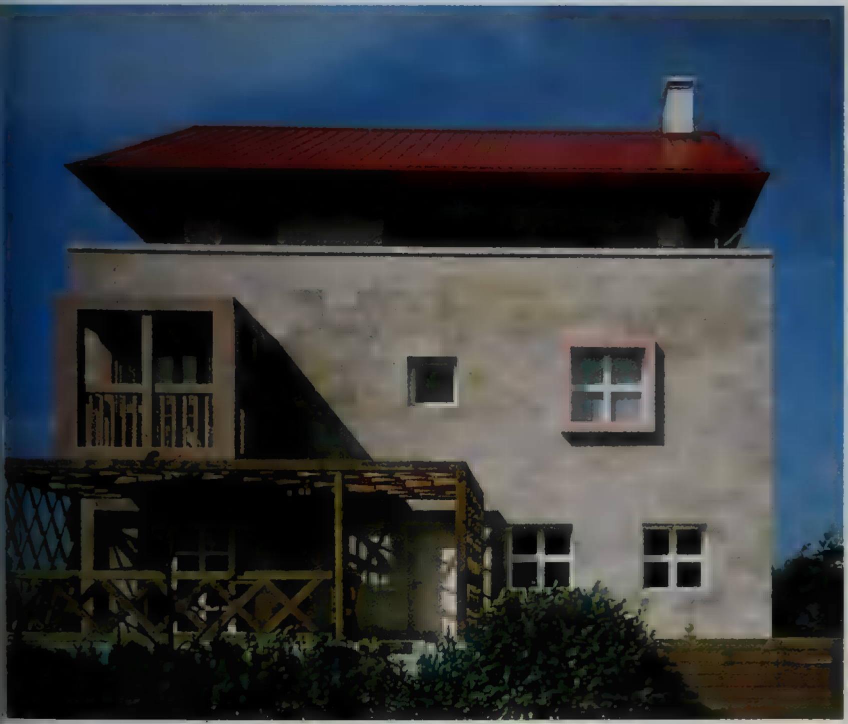


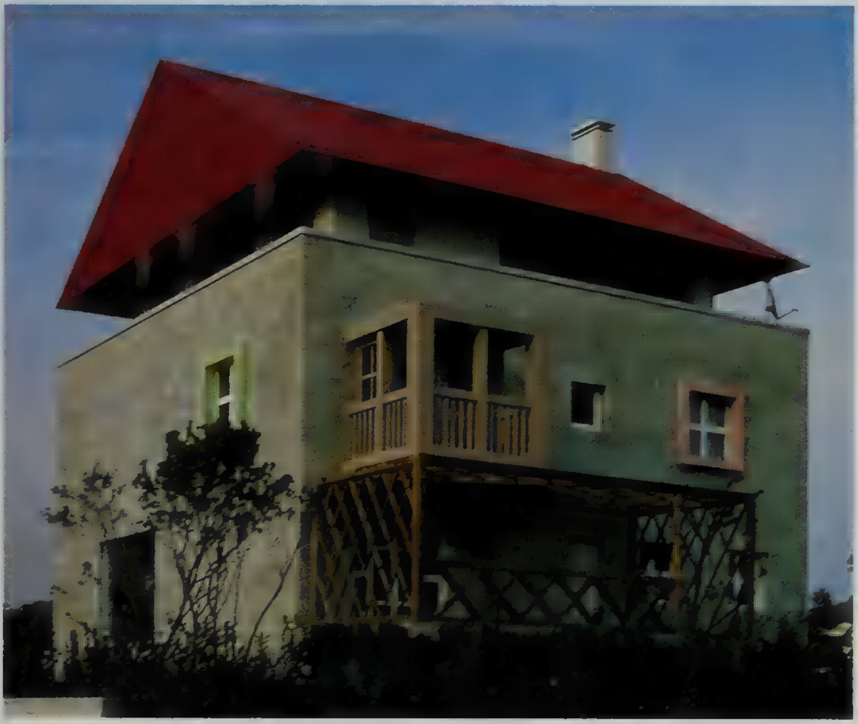
SECOND FLOOR

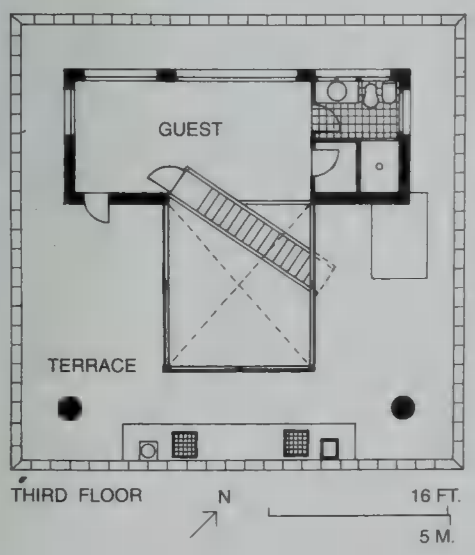
(everyone gathers for lunch at home every day, for example), the house has a simple concrete frame with brick infill and a metal-truss roof that seems to float above stone-clad walls. Whereas the exterior emphasizes the house's solidity, the interiors are surprisingly light, thanks to a central atrium that brings sunlight in from above. The same third-story windows that let in all that light also draw hot air out of the house when they are opened during warm months. On the ground floor, a large Tuscan-style kitchen allows the entire family to gather and a two-story-high living room provides an elegant space for socializing. The second floor is mostly bedrooms, while the third floor has a guest room and a wrap-around terrace offering views of the ancient Tuscan hills. *Clifford A. Pearson*

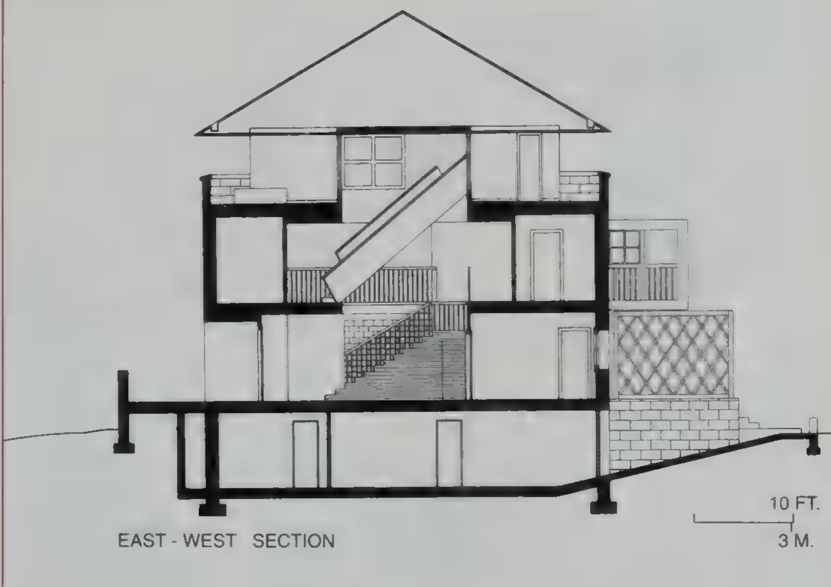
Credits
Casa Cei
Tuscany, Italy
Architect: *Sottsass Associati—Ettore Sottsass, Marco Zanini, Mike Ryan, design team*
Associate Architect: *Studio Maestrelli*
General Contractor: *COE*

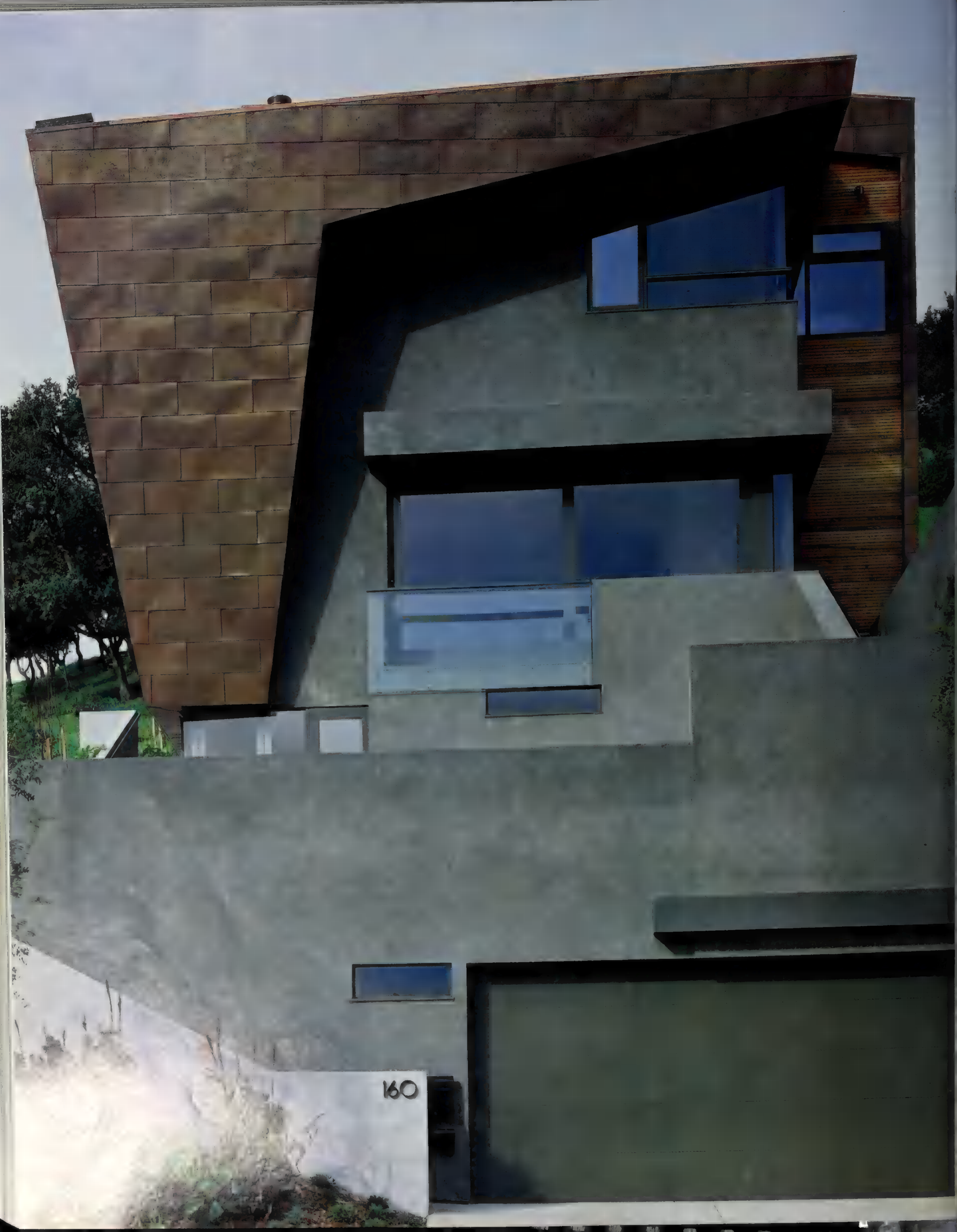
Casa Cei
Tuscany, Italy
Sottsass Associati, Architect
Studio Maestrelli, Associate Architect







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Act Two

Drager Residence
Oakland, California
Franklin D. Israel Design
Associates, Architect

n a landscape twice destroyed, once by fire and then by human building practices, the Drager house stands out as a monument to the American home. What architect Frank Israel has built in the Oakland Hills, across the bay from San Francisco, is a comfortable string of rooms that sums up traditions of domestic architecture. A central staircase gathers together a series of loft-like spaces that terrace the hillside, all sheltered by a prominent roof.

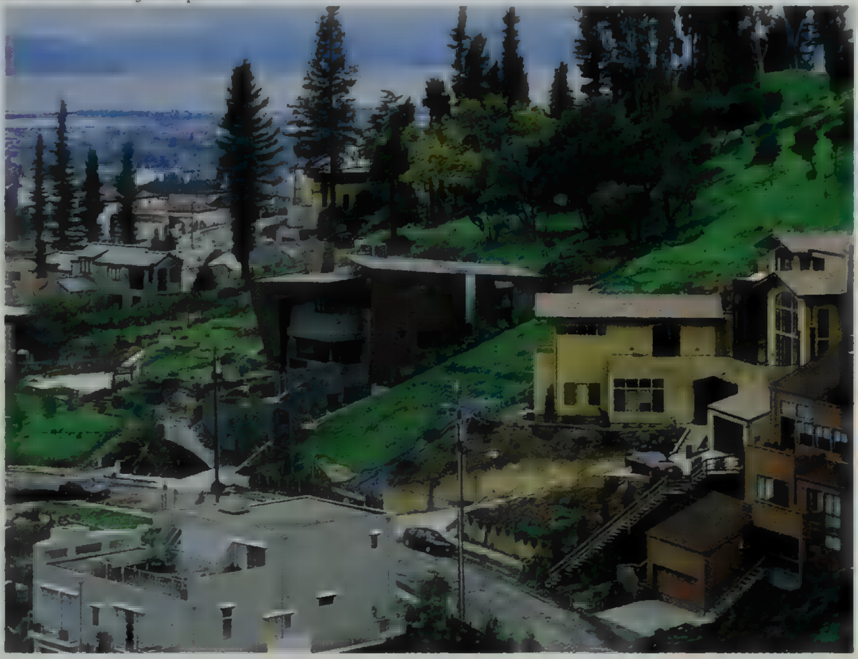
When the 1991 fire destroyed the Dragers' rambling Cape Cod-style house, they lost not only a comfortable and unpretentious home, but all of their possessions as well. Susan Drager wanted something better to come out of the destruction: "As a child I used to visit a Frank Lloyd Wright house in New Canaan, Connecticut. I couldn't believe that people lived like that. It stayed with me." The combination of a clean slate and a desire for great design made the Dragers "ideal clients," according to Israel.

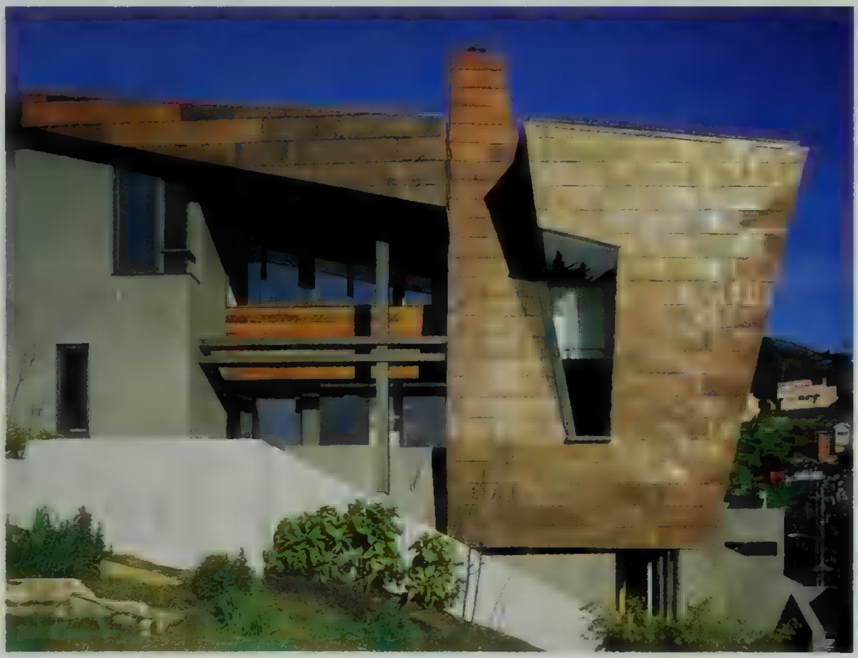
The site, however, had many restrictions. After the fire, new construction had to be approved by all of the abutting and confronting neighbors. Also, the Dragers had to provide off-street parking for four cars. The houses had to be constructed out of non-combustible materials. On the other hand, the owners were permitted to "max out" the footprints of their original homes, though additional new construction could not have more than 500 square feet of habitable space. The resulting boxes come as close to their neighbors as many of the older houses that had been built before set-back requirements took effect—generally simple volumes to build and accept (since neighbors act as critics).

Now the Dragers' neighborhood is filled with megaliths, mainly because the desire to build as much usable space as possible led architects to divorce most of the structures from their setting. In contrast, the Drager house steps up and back from the street. The strong roof is like a tent spread out over stucco shapes colored to echo the golden hues of the terrain. The fragmentation of the facades lightens the overall effect of 4,500 square feet. The progression up exterior steps to a middle-level entrance and then inside along a staircase that squeezes between rooms overlooking Oakland, the San Francisco Bay, and the hillside gives a dynamic sense of the landscape. The family and its activities are tied together in a knot of interior terraces, window slots, and vertical openings.

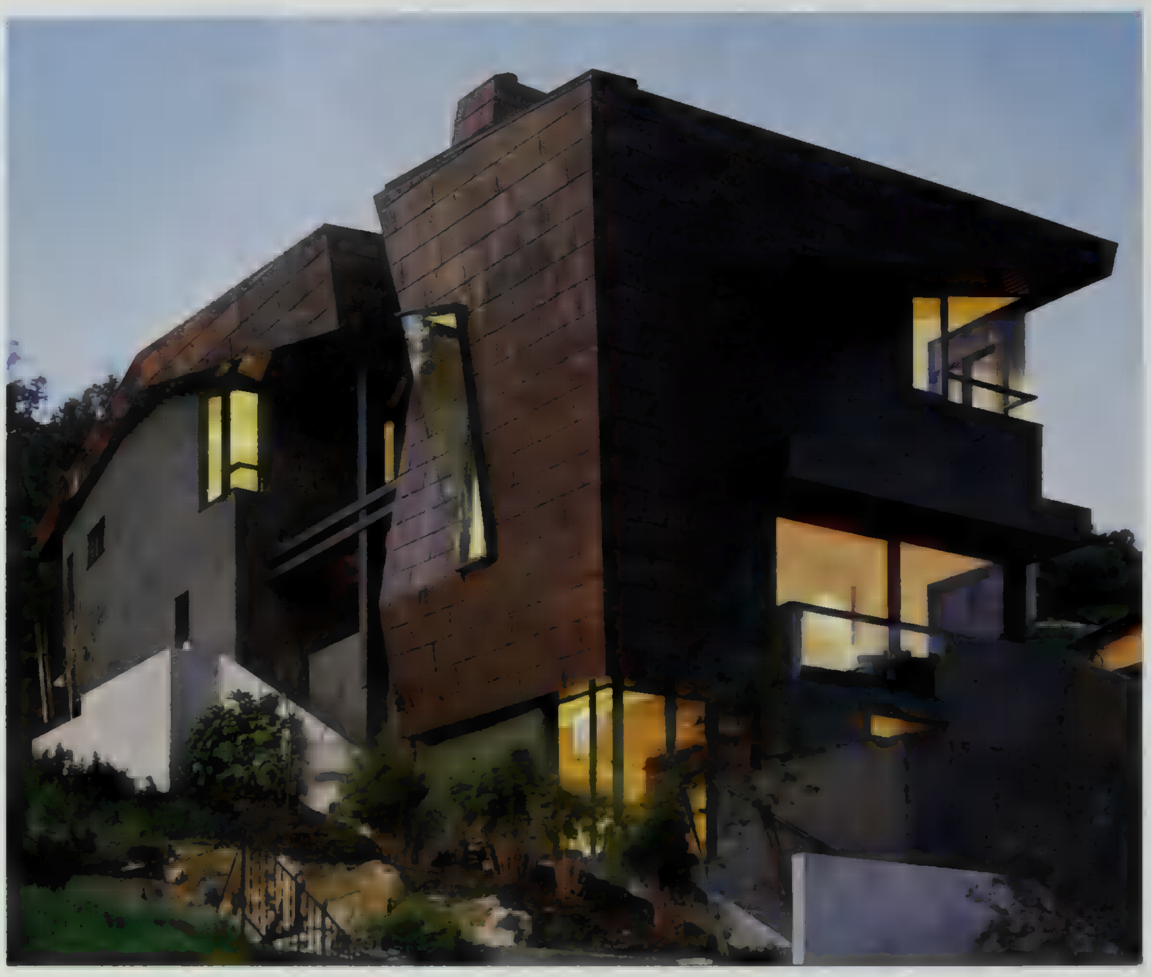
Israel found inspiration in the Shingle Style, yet incorporated his own signature—a bold use of color and materials [RECORD, April, 1993, pages 100-107]. "I wanted to transform the Dragers' experience of their house, and allow them to be aware of their site, as if they were living inside of the hill," says Israel, who collaborated with project architect Annie Chu on the design. "It was necessary to create a direct and intimate relationship to the place." At the same time, Israel sees it as "a singular form under the spreading roof, a ship riding off into the views." The Dragers describe the structure as a phoenix, an apt comparison considering the history of its design. Rising from the ashes, the house's wing-like roof spreads out to provide shelter.
Aaron Betsky

©Grant Mudford photos



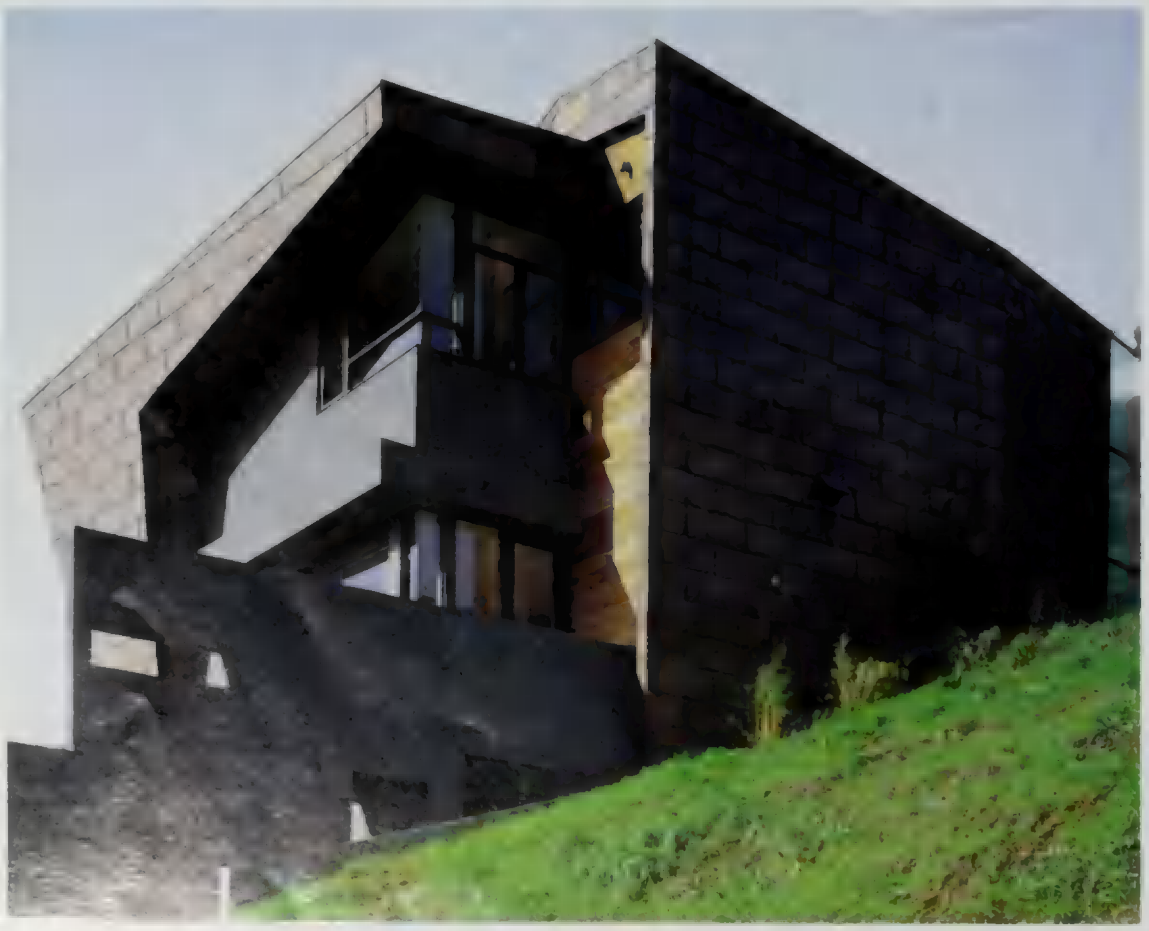


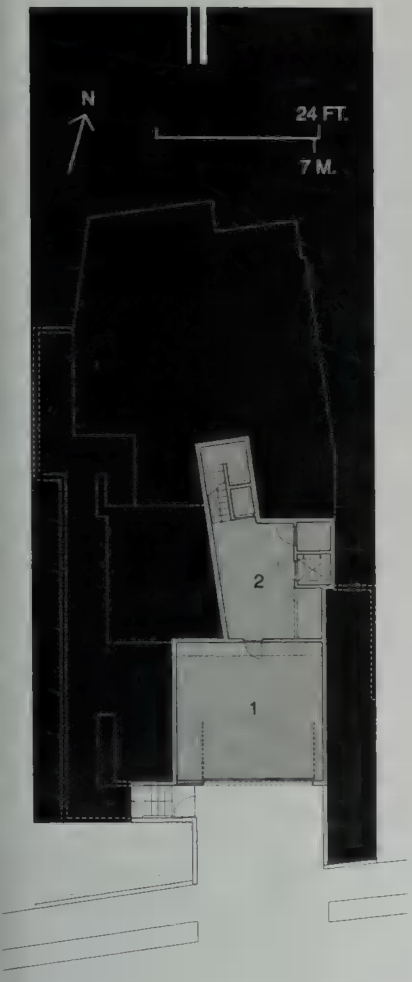
A roof of copper shingles envelops the structure, protecting it from fire (top). Israel split and shifted volumes to allow light to enter interior rooms, and hollowed out an entry porch below the spreading form (bottom). The base is sand stucco and redwood siding to blend with parched hills (opposite).



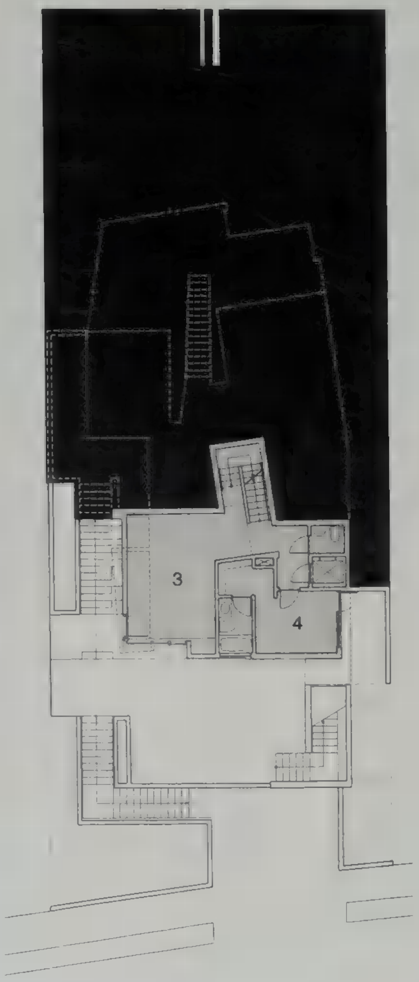
Blending suburban building types, the Drager house is a split-level that rises up a steep hill, soon to be filled with larger houses. The gridded street-front facade melds several traditions, including Rudolf Schindler, a favorite source for Israel, and the bungalows with articulated wood structures and strong roof profiles common to the neighborhood.

At the center of the structure is the point of entry, the "great hall," around which the main public rooms are arranged. The living room fills the width of the house and borrows light from both sides.

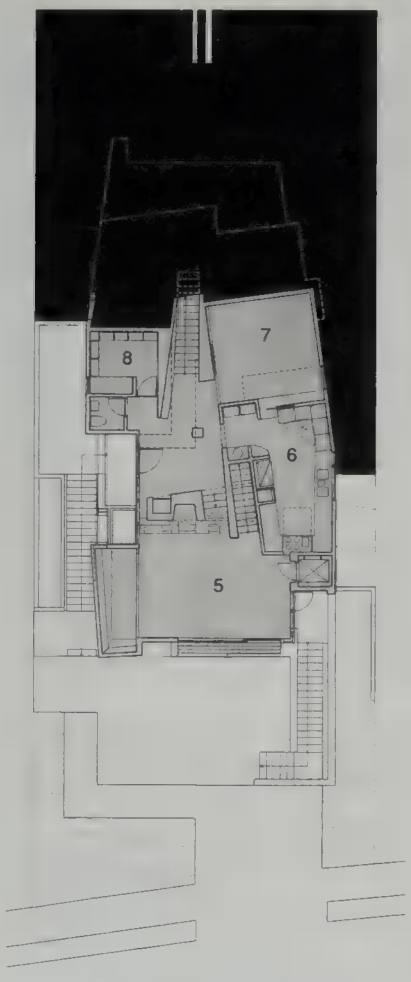




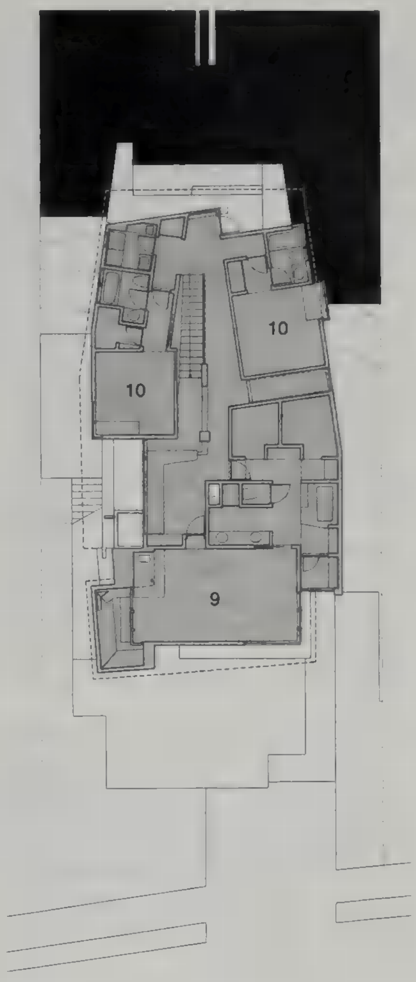
LOWER LEVEL



SECOND LEVEL

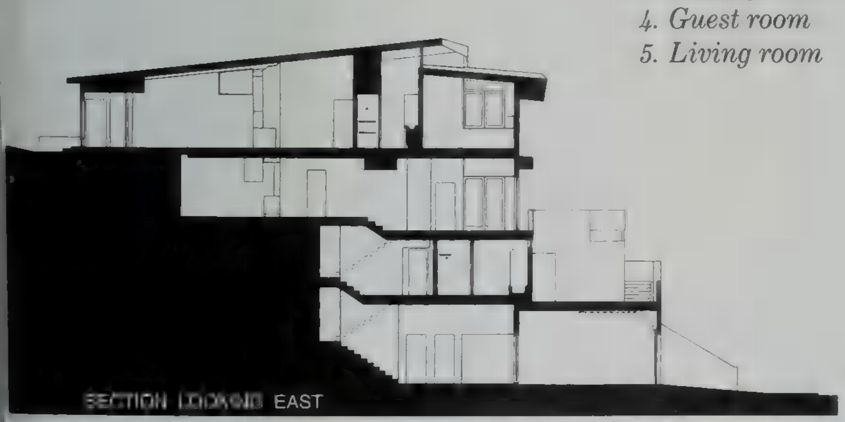


ENTRY LEVEL

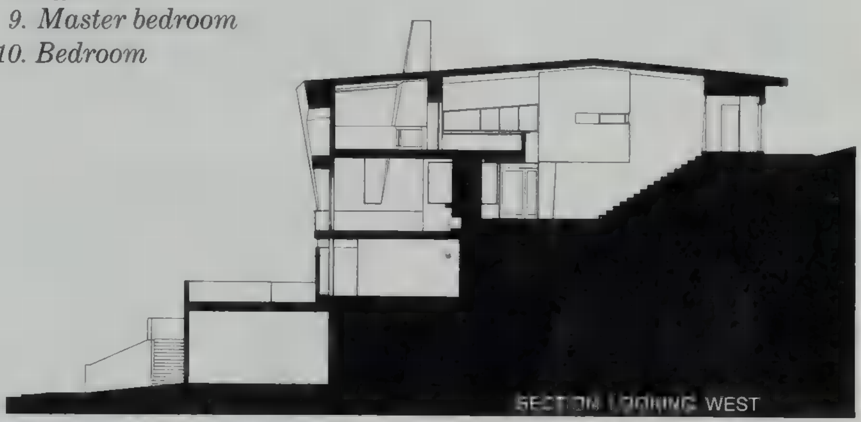


UPPER LEVEL

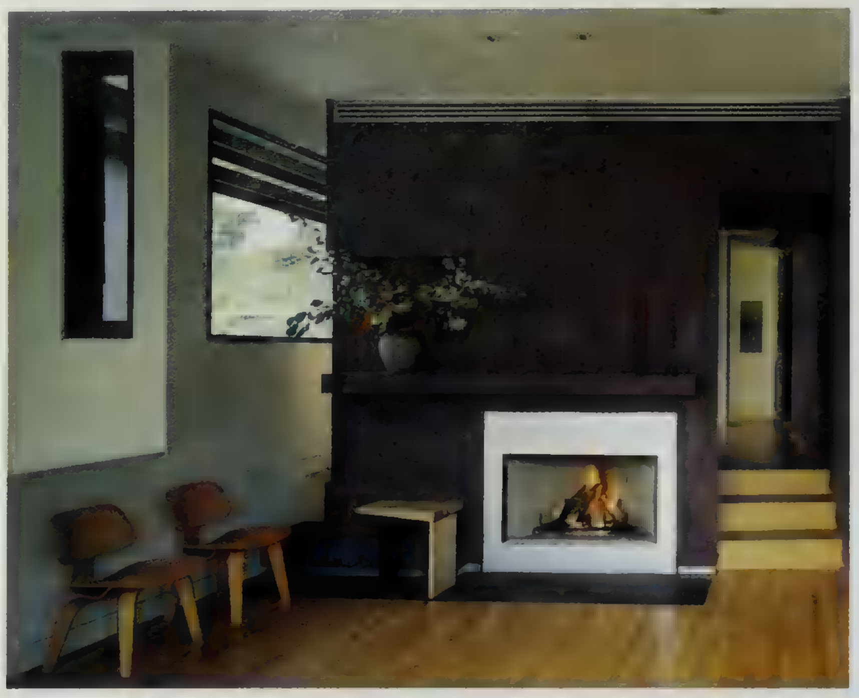
1. *Garage*
2. *Storage*
3. *Family room*
4. *Guest room*
5. *Living room*
6. *Kitchen*
7. *Dining room*
8. *Office*
9. *Master bedroom*
10. *Bedroom*

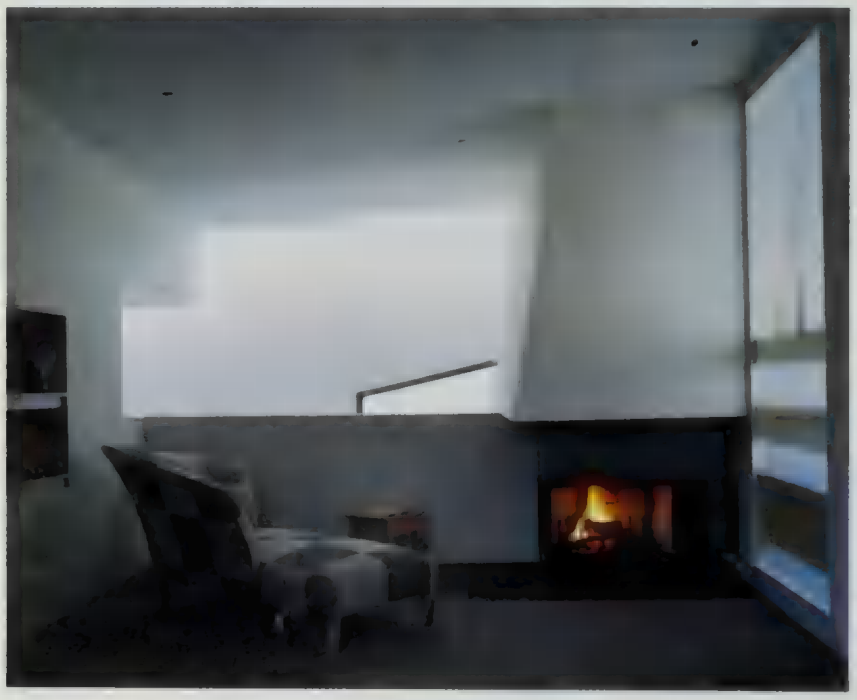


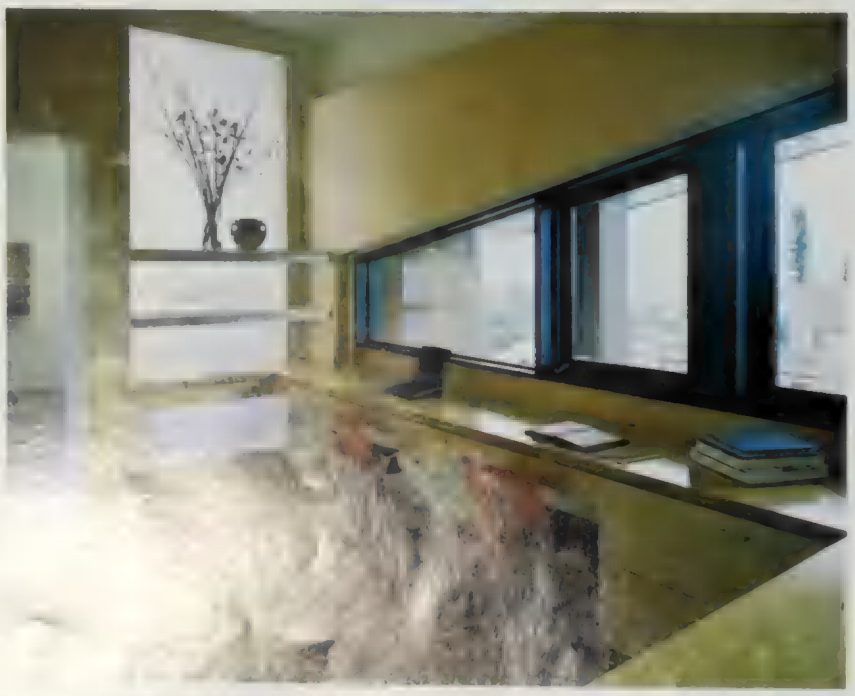
SECTION LOOKING EAST



SECTION LOOKING WEST





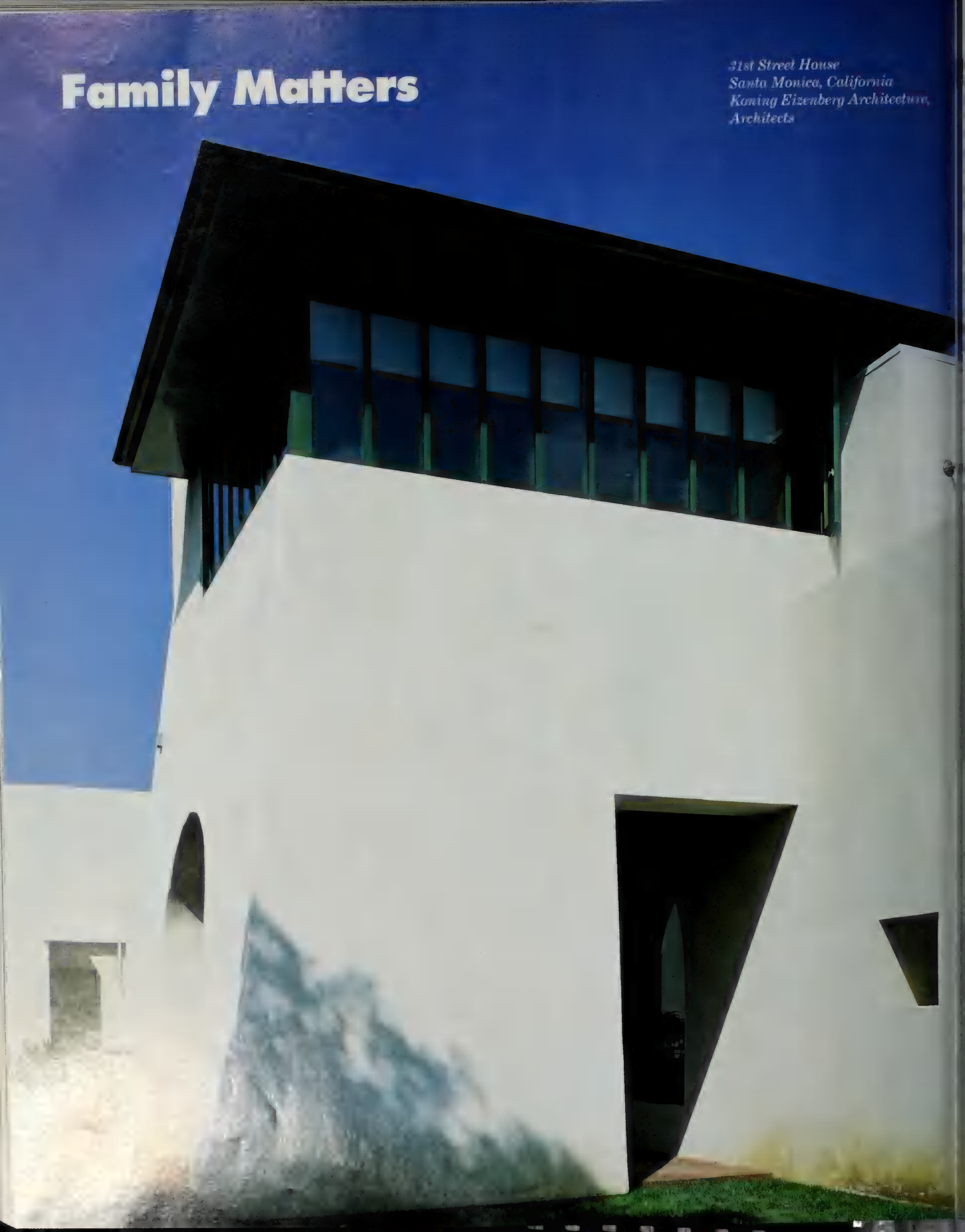


The detailing of the interior appears deceptively simple. The central stair climbs the hillside and curves around a leaning wall, creating an abstract composition of overlapping spaces (middle left). Windows are framed in Douglas fir painted a dark green that appears almost metallic. Floors in the public areas are concrete. The limited material palette also includes pigmented plaster (top left) and plywood. Wood furniture is by Roy McMakin (opposite) and glass sculptures in the study are by Nikolas Weinstein (bottom left).

Credits
Drager Residence
Oakland, California
Owner: *Sharon Drager*
Architect: *Franklin D. Israel Design Associates—Frank Israel, principal-in-charge; Annie Chu, project architect; Barbara Callas, project manager; Jay Deguchi, Rick Gooding, Bill Molthen, Tom Zook, Ivan Oviedo, Jim Tsai, Danny Kaplan, Felix Ang, Michael Matteucci, Sigrid Geerlings, Sarai Grenell, project team*
Engineers: *Joseph Perazzelli (structural); Brian Kangas Foulk (civil);*
Consultants: *MB&A (mechanical); F.I.R.E. L.T.D. (lighting)*
General Contractor: *Archetype—Zach Nemzer, Richard Clark, Wil Bailey*

Family Matters

31st Street House
Santa Monica, California
Koning Eizenberg Architecture,
Architects

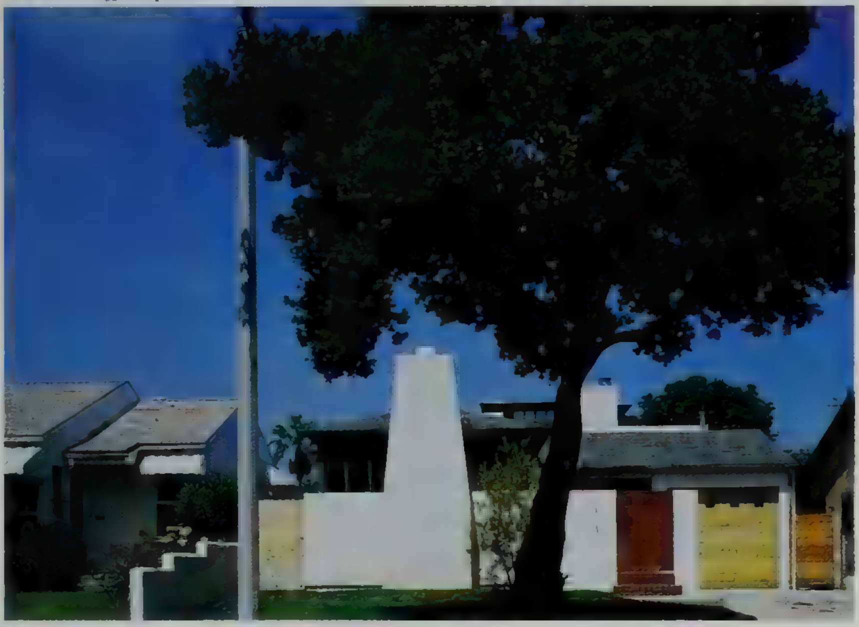


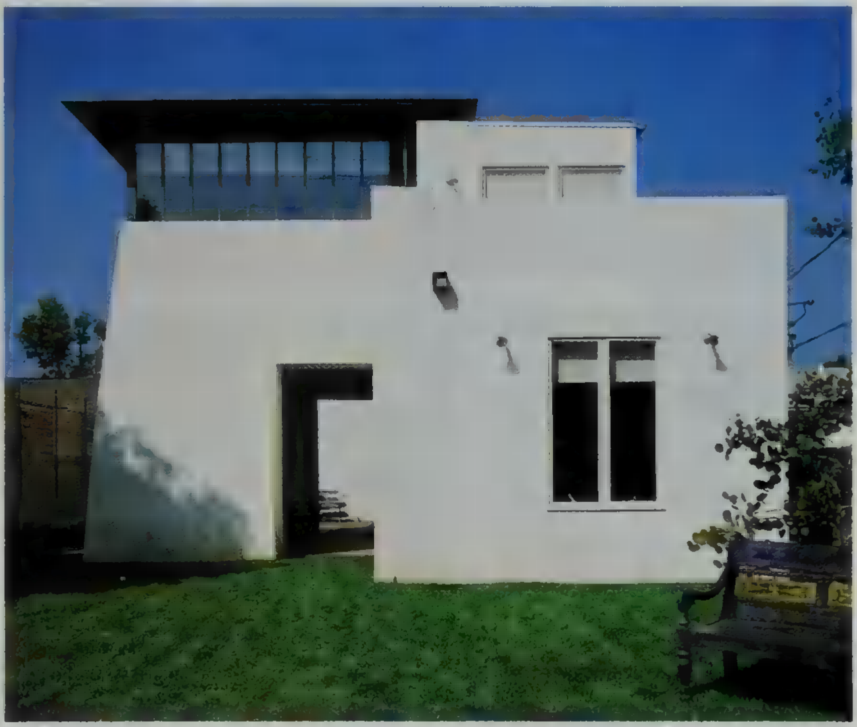
nlike neighbors in more affluent sections of town, the clients for this project (a couple with two children) wanted changes to their 1930s Santa Monica cottage to be virtually invisible from the street (top right). For architects Hank Koning and Julie Eizenberg, known for both commercial and residential work [RECORD, Mid-April 1988, pages 90-95], the compact 40-foot by 150-foot site presented little obvious room to maneuver; nonetheless, they managed to assert their presence. Says Eizenberg of their small, yet forceful addition: "We were well behaved."

Local zoning ordinances prohibited adding more than 50 percent of the existing square footage of 1,300 unless, among other things, garage space was doubled. Koning, Eizenberg, and project architect Tim Andreas were able to reorganize an inefficient floor plan and pack in 650 square feet more, mostly in the second floor of a chunky 21-foot-high tower that does not exceed the area's height limit of 28 feet (bottom right and opposite). The tower also provides sheltered outdoor dining in the courtyard. For design clues, the architects looked to Irving Gill, whose stucco-covered cubic forms and signature strips of rectangular windows reappear here.

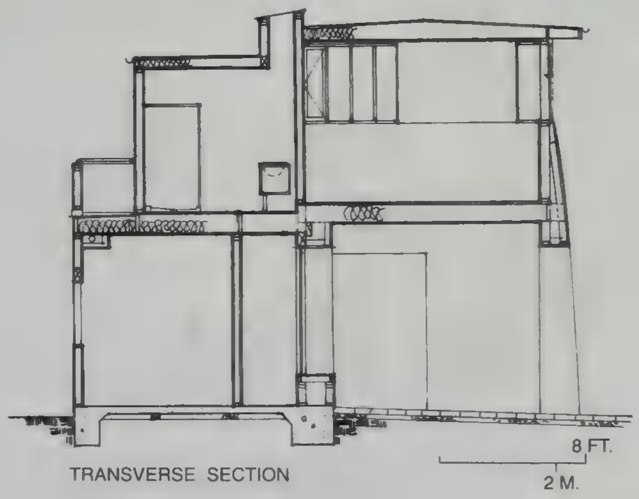
While a thickened chimney in the front acts as a privacy screen along the street, new windows pushed to the perimeter and around the front corners generously admit light and give the impression of a floating roof. The architects removed an interior dropped ceiling, lining the underside of the newly exposed gable with wood and reinforcing the structure with tie rods, which, when painted the same butter color as the walls, almost disappear. They smoothed out the odd volumetric ins and outs of the south wall by moving the kitchen and a cramped, formal dining room out into the open and reconfiguring leftover space into a powder room and maid's room. Unlike Gill's houses, which are characterized by compact, densely interwoven rooms, this interior now has the feel of a sprawling loft, borrowing light and space from adjacent areas. In the sitting room, oversized Douglas fir-framed sliding doors overlook a paved courtyard that is shielded from the house next door by a concrete block wall, extending the room into the garden. It's Koning and Eizenberg's blurring of the lines between inside and outside that gives new vigor to the original interior, without turning the house into a public spectacle.
Karen D. Stein

©Tim Griffith photos

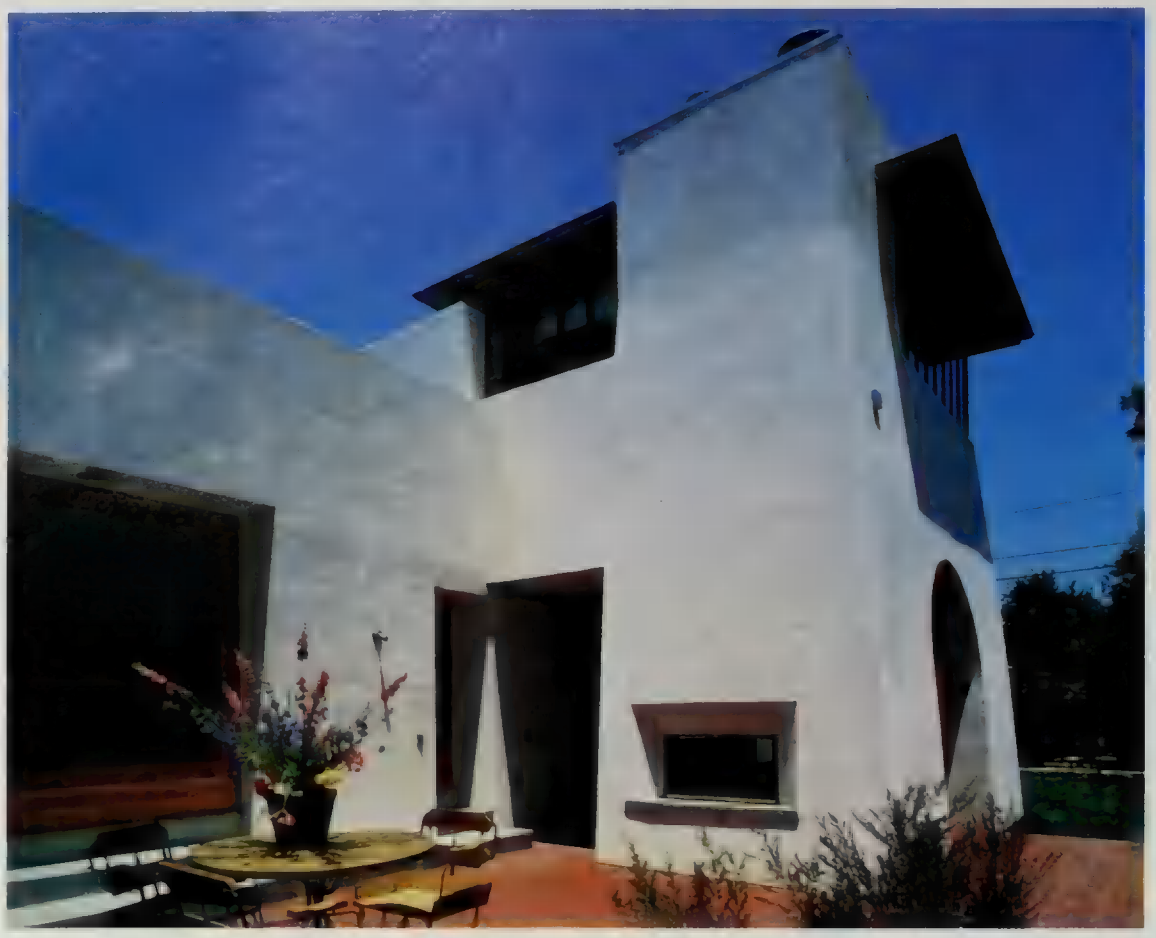




To retain a modest street-front facade, the architects did minimum renovation to the house front (top right), saving their architectural expression for a backyard master-bedroom tower, which peeks out over the main volume (bottom right). Stucco arches flare out 18-inches—a massive base for a glass-rimmed suite (opposite).

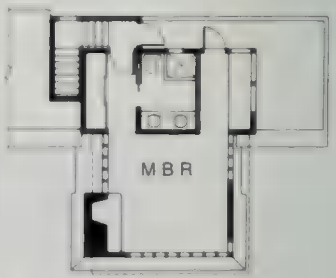


TRANSVERSE SECTION

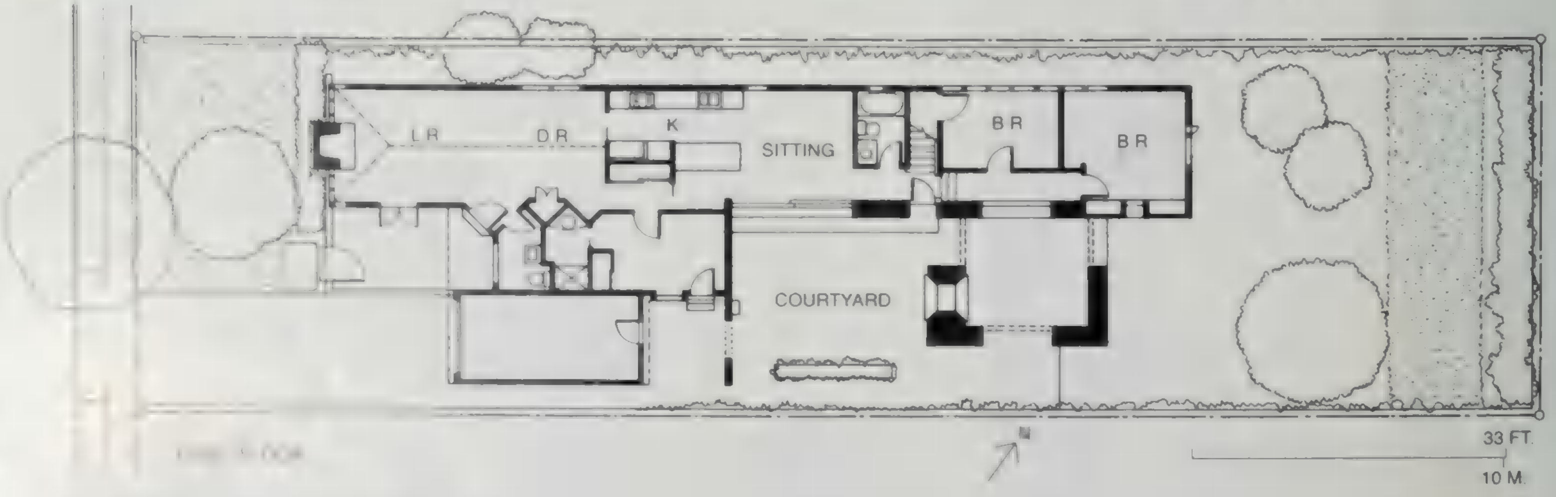


The architects opened up a warren of enclosed rooms to create a loft-like series of linked areas that borrow space and light from one another. The former kitchen and dining area were gutted and are now a powder room and maid's quarters with a separate entrance from the side courtyard (plan below). The new kitchen is a wide corridor, connecting living/dining with a sitting room. A tower covers an outdoor eating area (photos left) and houses the master bedroom. Bands of green rectangular windows are studied reminders of Irving Gill (opposite).

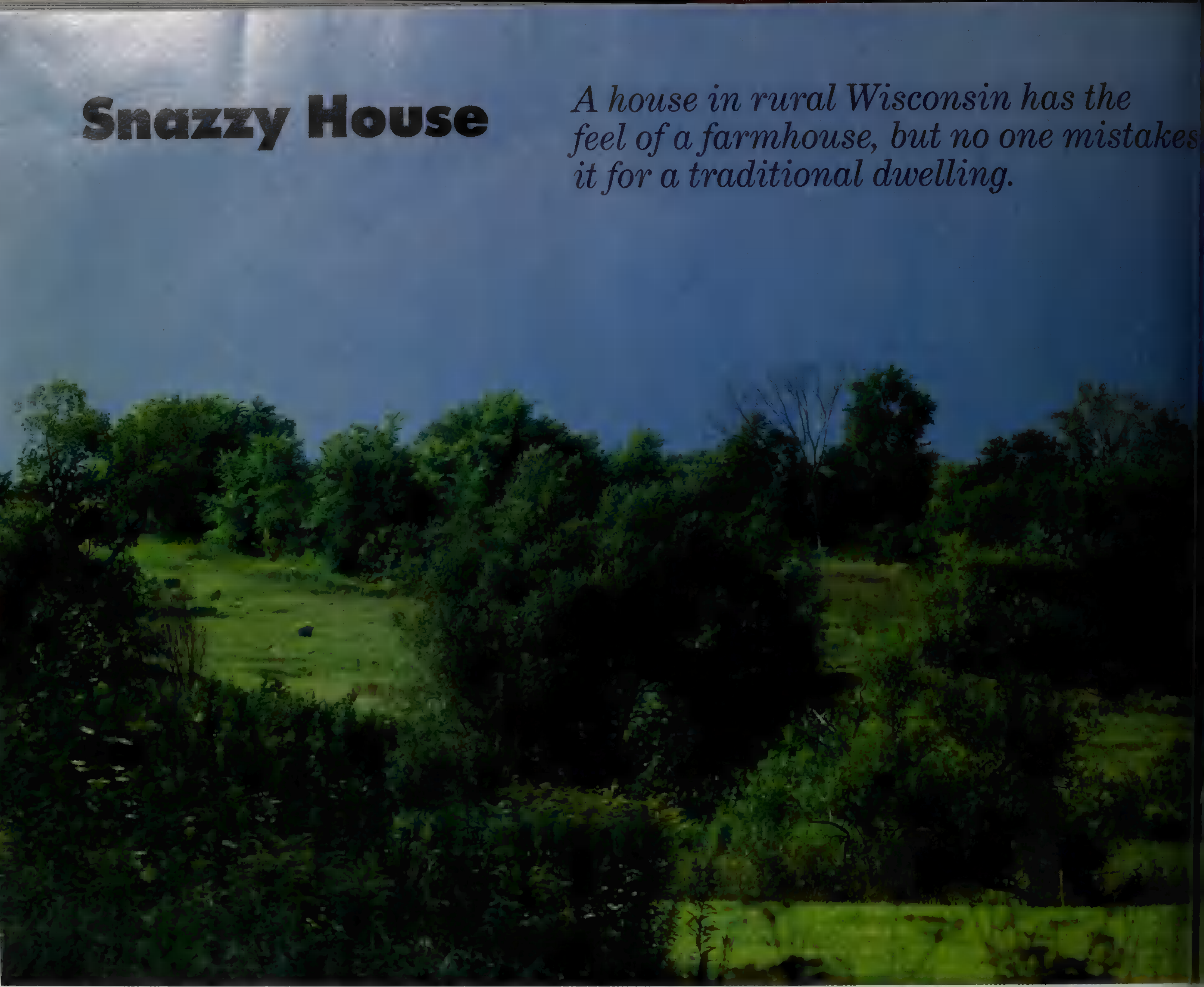
Credits
31st Street House
Santa Monica, California
Owners: *Joanne and Philippe Valli-Marill*
Architect: *Koning Eizenberg Architecture—Hank Koning, Julie Eizenberg, principals-in-charge; Tim Andreas, project architect; Brian Lane, team*
Engineer: *Ross Downey & Associates*
General Contractor: *Charles Kuipers Design*



SECOND FLOOR



FIRST FLOOR



Snazzy House

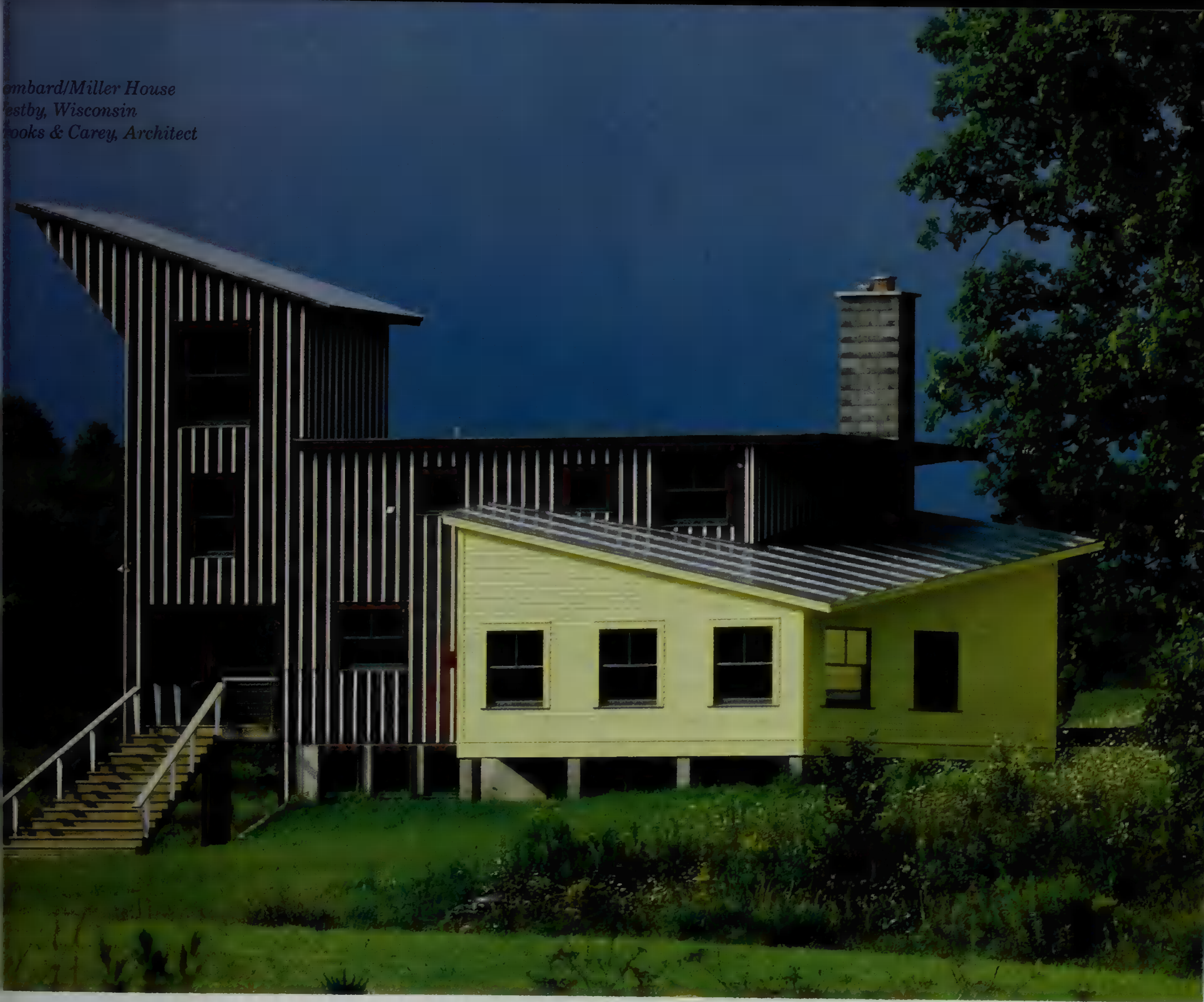
A house in rural Wisconsin has the feel of a farmhouse, but no one mistakes it for a traditional dwelling.

During two decades of practicing in northern Vermont, Turner Brooks has designed a series of small buildings of special formal and spatial originality, using wood-frame construction and vernacular elements. The owners of this latest house, artists Sharon Lombard and Amos Miller, had moved from Cincinnati to rural Wisconsin, seeking a tranquil place in which to live, work, and raise their daughter. Neither wanted what Lombard calls "an ostentatious money-statement"—they wanted, instead, a house that would comfortably fit both the regional landscape of fields and hills and the local society of dairy farms and small towns.

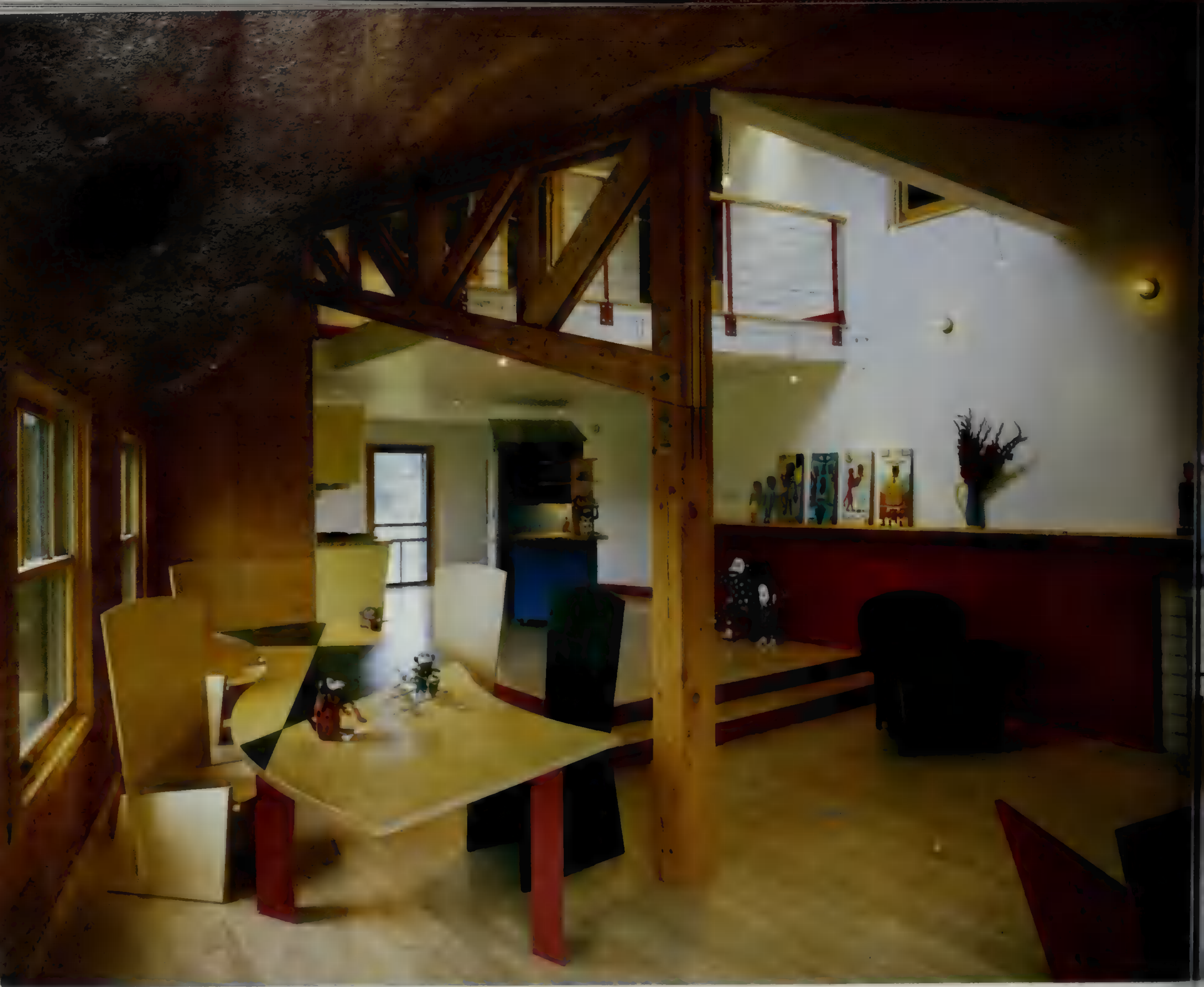
The couple learned of Brooks's houses in magazine articles, and liked their verve and inventiveness. Of particular interest was a loft in New York City in which they noticed one of Brooks's toy-like "Hovering Small Huts." Though a distant cousin of that work, the Lombard/Miller house still has distinct features that relate to it, including a [illegible] that helps define dining and living spaces; [illegible] as [illegible]; a double-hung window rotated diagonally, and [illegible] windows of various sizes. Also [illegible] the architect's earlier work is the house's arrangement of space. "I like buildings that remain mysterious and ambiguous and that one must journey through, sometimes repeatedly, before beginning to comprehend them," Brooks wrote in a recently published monograph of his work. Although only 2,400 square feet, the house contains four levels of spaces whose interrelationships reveal themselves gradually, beckoning the visitor to explore from floor to floor.

It is possible, of course, to make too much of stylistic continuity, for every good design resolves specific conditions. Here, regional tradition influenced the exterior; the board and batten cladding, its dashing red and white, refers directly to local barns built by Norwegian settlers. More subtly, the yellow of the clapboards alludes to the butter produced by the region's dairy farms. Nestled into a hillside, and shaded by oaks, this new house has, as its owners wished, the feel of a farmhouse. No one, however, mistakes it for a traditional dwelling, and it has provoked much interest in the community, and even some flights of fancy. One visitor compared it to a whooping crane; another to a dog barking at the moon; Brooks himself likens it to a praying mantis. And, more down to earth neighbors affectionately call it "the snazzy house." *Nancy Levinson*

ombard/Miller House
estby, Wisconsin
ooks & Carey, Architect

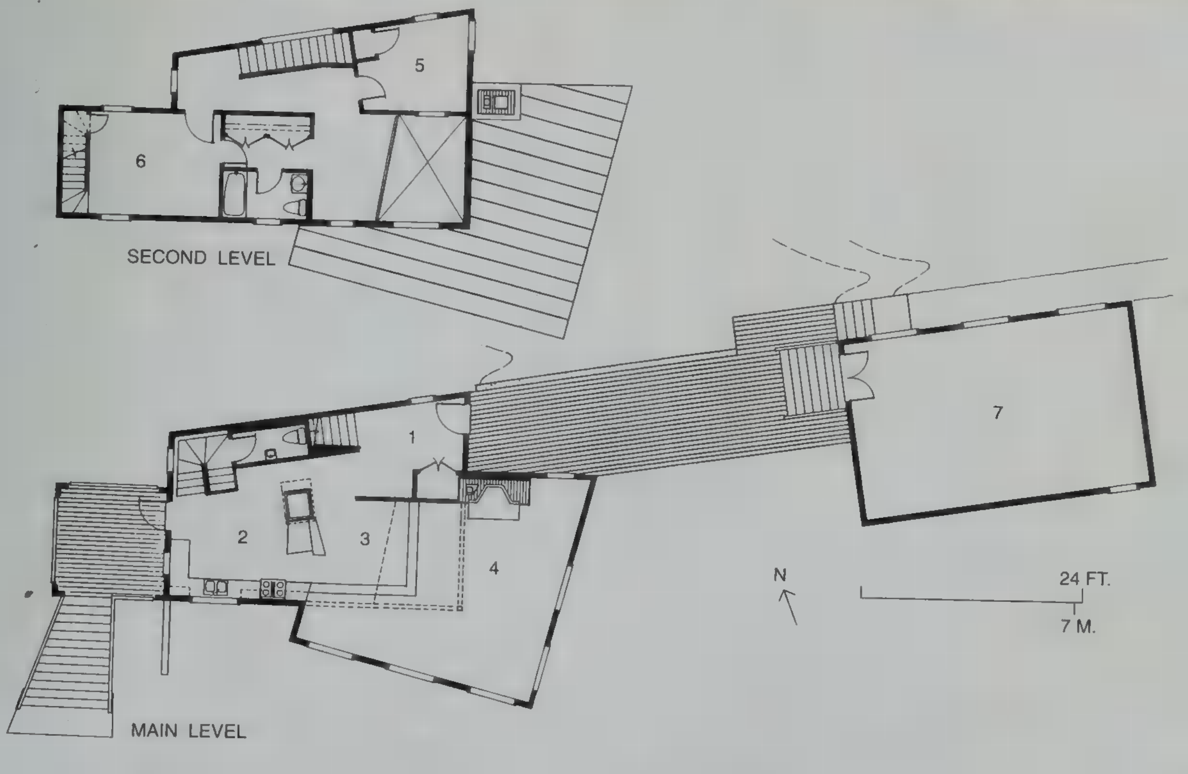


rvin Robinson photos



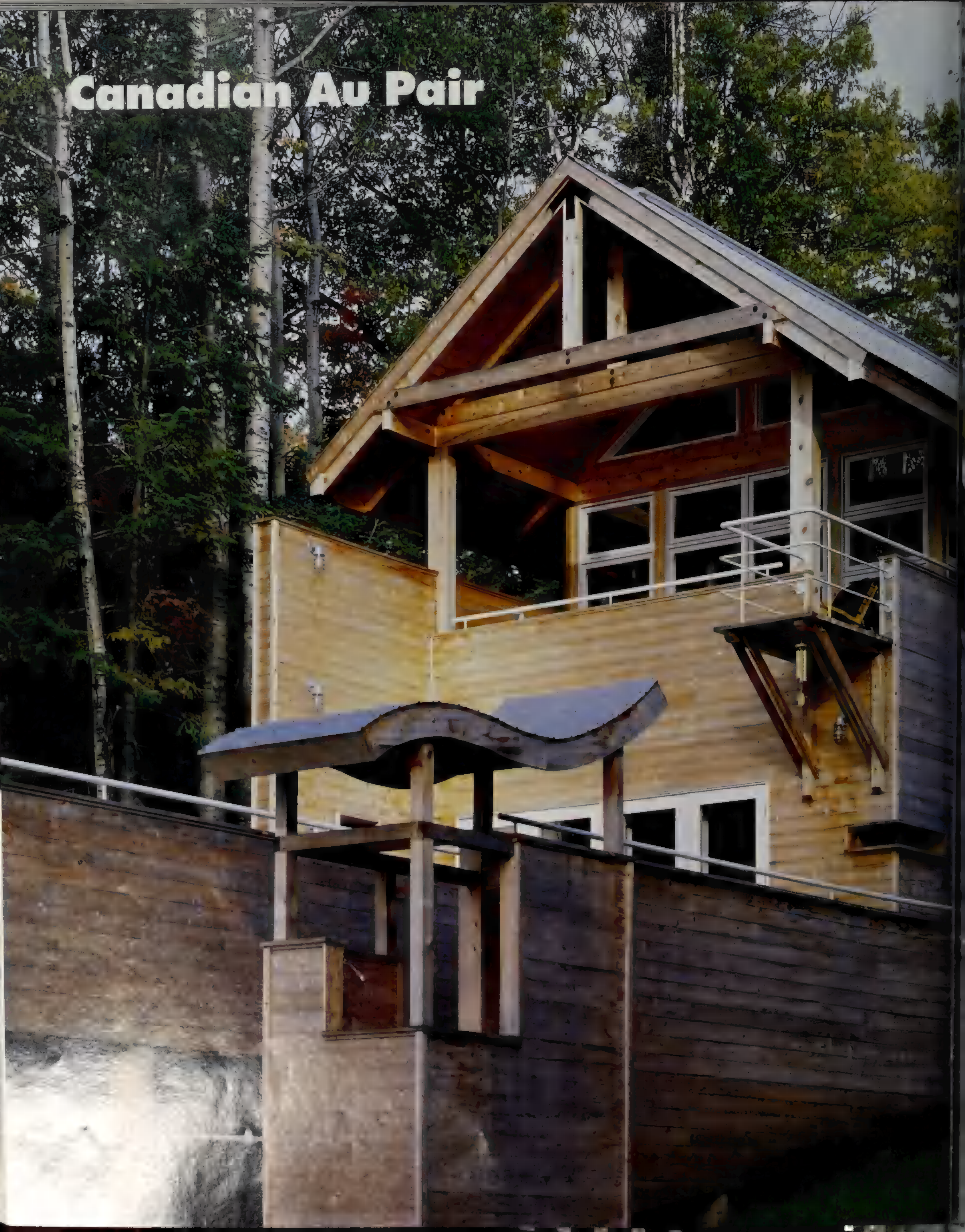
Lombard is a performance artist, and her parents, who live nearby, are puppeteers. Thus the house incorporates elements that encourage small-scale theatrical performances: a platform in the living room, which Brooks calls a "makeshift stage," and the exterior stairs that cascade down from the kitchen porch create impromptu bleachers. Other elements with stage presence include a balcony and several interior windows. Recently, a bedroom window played a major role in a children's party, serving as the launch point for "flying ants," made of candy bars lowered to excited guests below. The living/dining/ kitchen space is finished in a lively combination of materials: walls are fir plywood, painted wood wainscoting, and drywall; the floors are maple. The dining table an chairs were designed by Brooks.

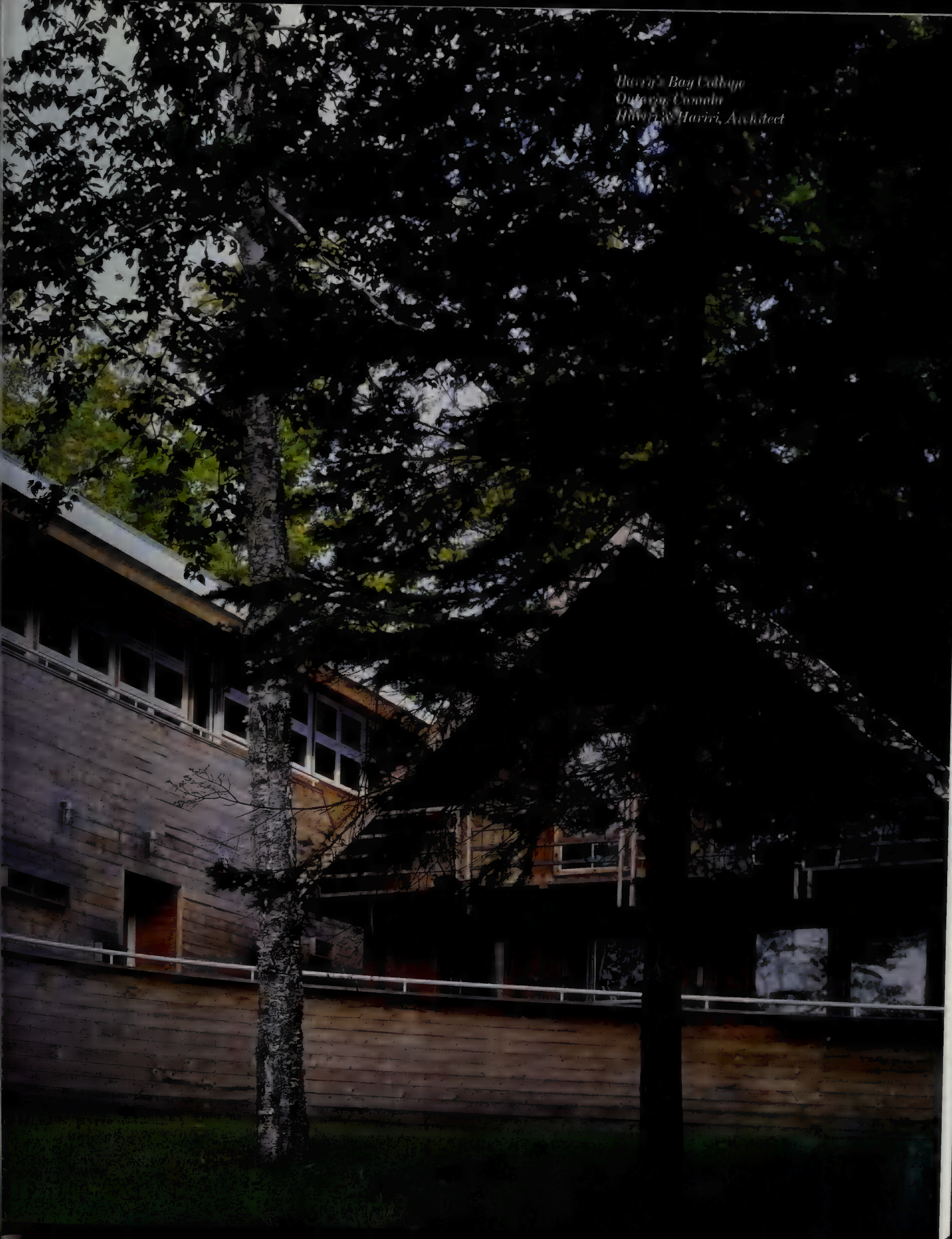
Credits
Lombard/Miller House
Westby, Wisconsin
Architect: *Brooks & Carey—Turner Brooks, principal; Dennis Willmott, Thomas Warner, associates*
Consultants: *Arthur Choo (structural); John Bates (lighting)*
General Contractor:
Daniel Arnold



1. *Entry*
2. *Kitchen*
3. *Dining room*
4. *Living room*
5. *Bedroom*
6. *Master bedroom*
7. *Studio*

Canadian Au Pair





Barry's Bay Cottage
Ontario, Canada
Hariri & Hariri, Architect

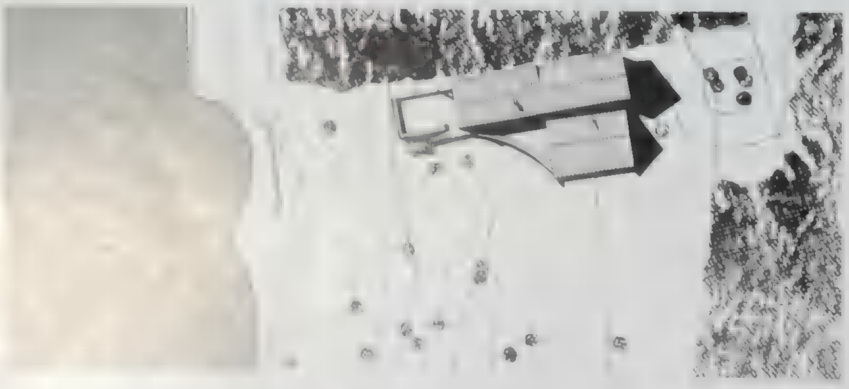
Squeezed between an existing A-frame cottage that the clients wanted to keep for sentimental reasons and a grove of tall birch trees, the 2,500-square-foot addition designed by Gisue and Mojgan Hariri is a Modernist long-house shaped by the boats, trees, and vistas found in this rustic part of Ontario near Barry's Bay. A summer home for a Virginia couple and their four grown children, it is a place where the horizontal thrust of the nearby lake and the vertical pull of the slender birches are perfectly balanced. It is also a place where the tightly spaced structures create an almost palpable sense of compression, while their shared deck spreads out toward expansive views.

As in their Gorman Residence in Connecticut [RECORD, April 1993, pages 76-83], the Hariri sisters faced the challenge of adding on to an undistinguished, pitched-roof house. Steeped in the Corbusian Modernism taught at Cornell in the 1970s, the Hariris might have been expected to emphasize the contrasts between old and new, vernacular and Modern. But in neither project did the architects take such a contrasting approach. In the Gorman Residence, they penetrated the old house with a new glass-and-steel bridge that, literally and figuratively, ties the entire composition together. In Ontario, they pushed the new structure to within three feet of the old, creating a long narrow alley that links two buildings and two design vocabularies together. "In Connecticut, we overlapped and penetrated spaces, while here we dealt with the separation of spaces and volumes," says Gisue Hariri.

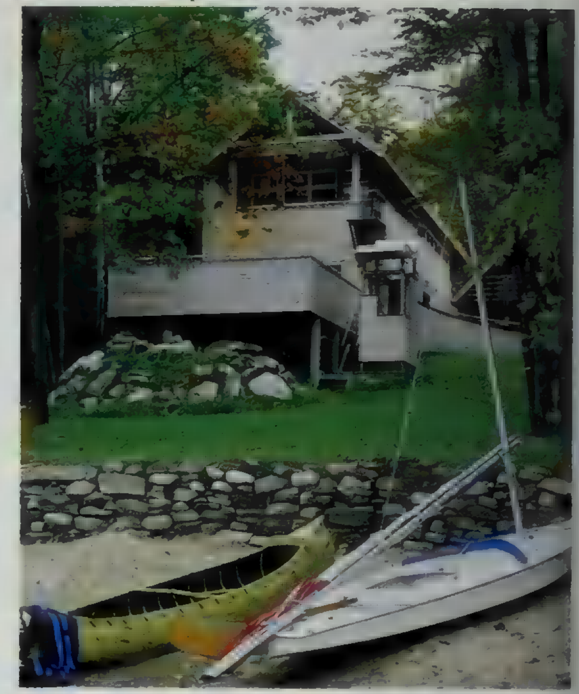
Although distinct structures, the two components of the Barry's Bay project work as a single house with one kitchen, dining room, living area, and deck. Responding to questions from the local zoning board, the architects showed that a house isn't defined by one roof. By creating two components, the Hariris allowed the clients' children to entertain in the old house without disturbing their parents in the addition. At the same time, shared deck areas accommodate outdoor dining and relaxing. And the placement of two buildings so close together creates a tension that is released in dramatic fashion as the rear deck spreads out in a graceful curve to embrace both structures.

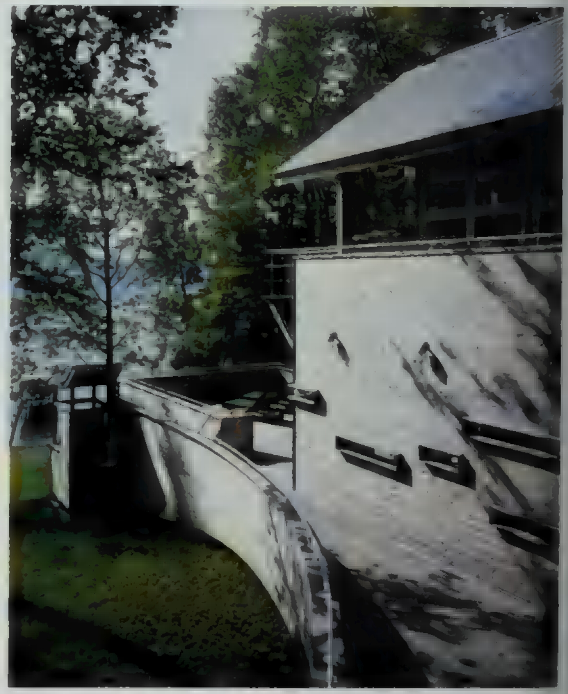
Although the addition echoes the pitched roof and wood siding of the old cottage, its clearly expressed structure and clean lines proclaim its Modernist lineage. Built on wood beams resting on concrete piers, the new structure's frame construction allowed the east facade to be punctured with long slot windows that the architects say recall the horizontal lines on birch bark. Metal pipe railings, along with wood decking and long cedar wall planks, hint at the nautical theme inspired by the lake and the boat-storage room that occupies a large part of the house's lower level.

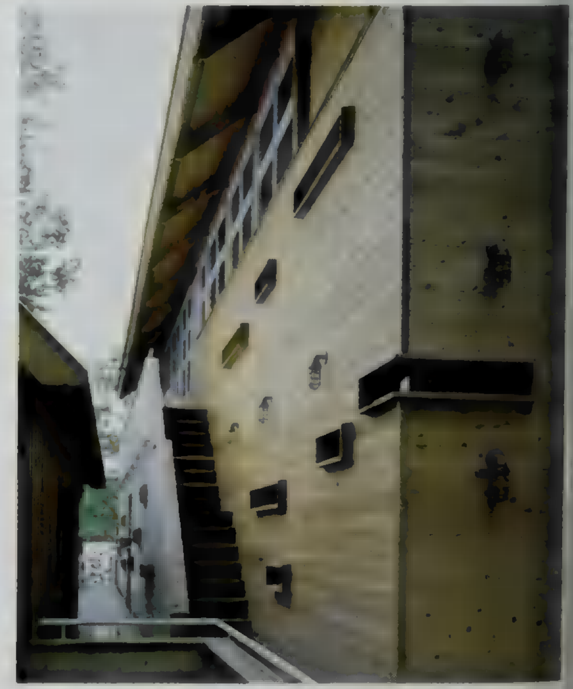
Maintaining a simple palette of materials, the interiors are flowing spaces that overlook the lake without sacrificing a sense of enclosure. Indeed, it is this balancing of opposites that is becoming a hallmark of the Hariris' work to date. *Clifford A. Pearson*



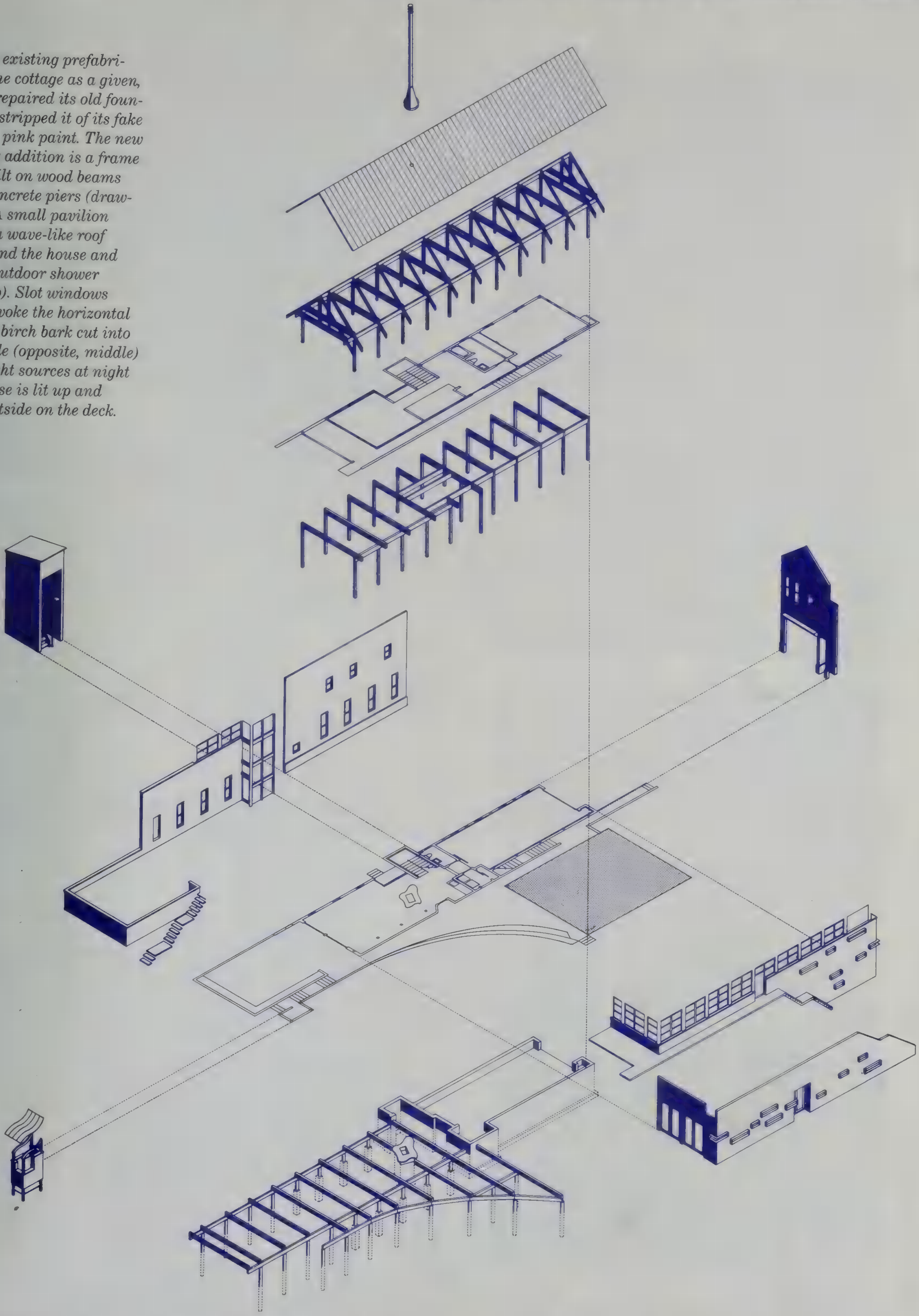
© *John M. Hall photos*

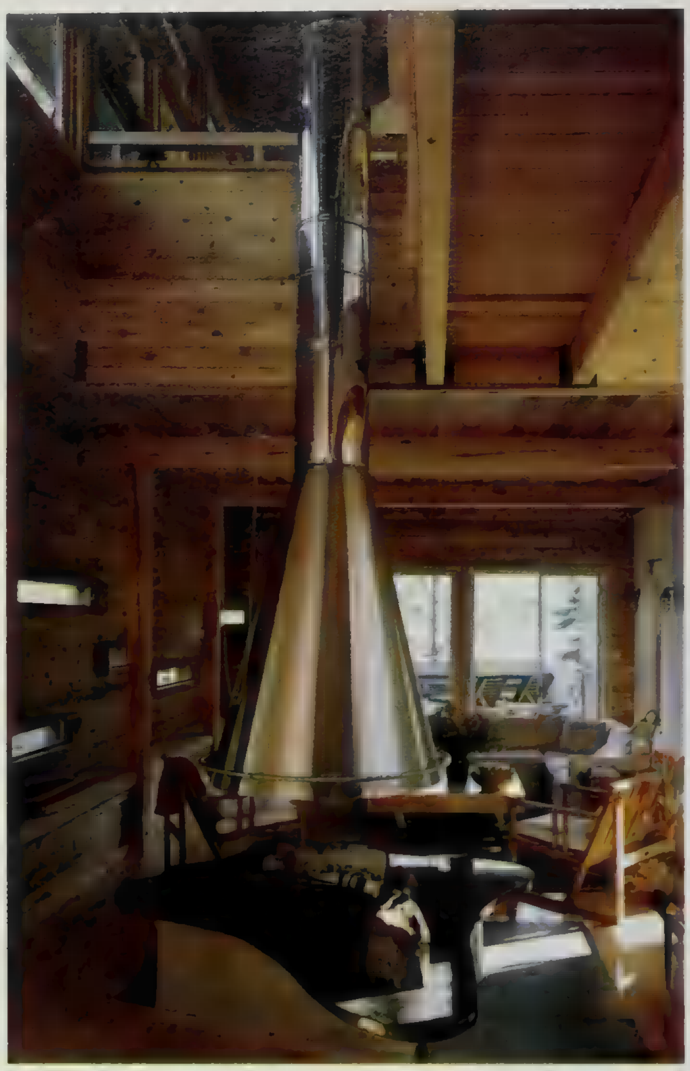


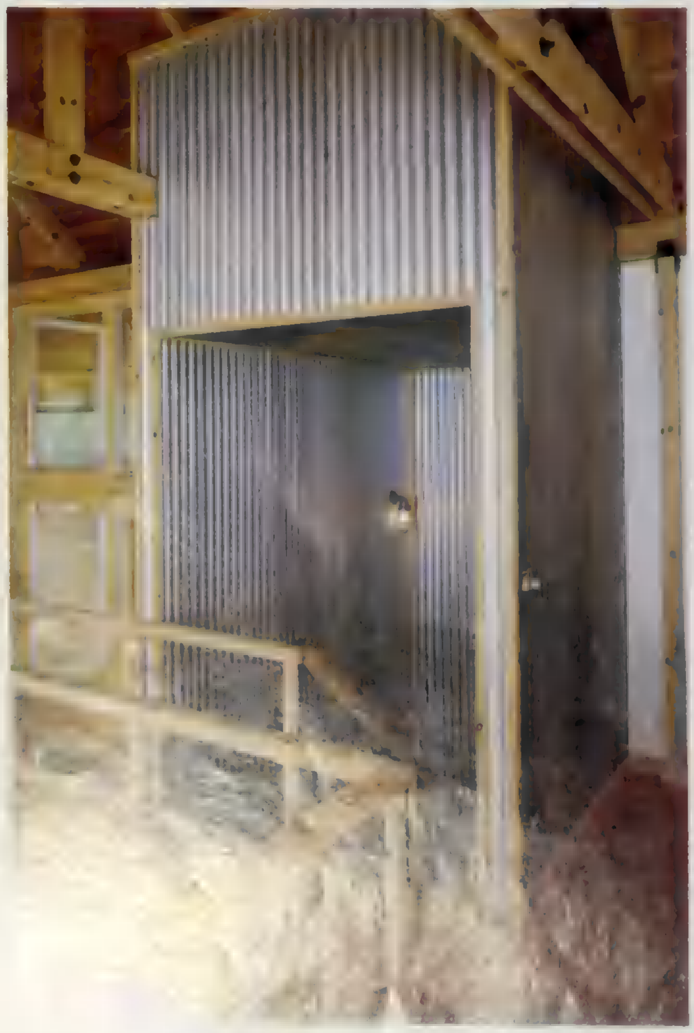


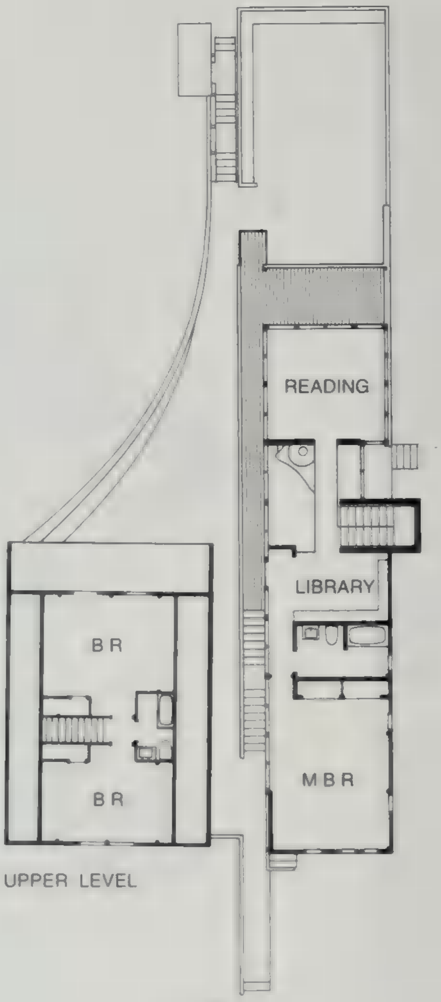


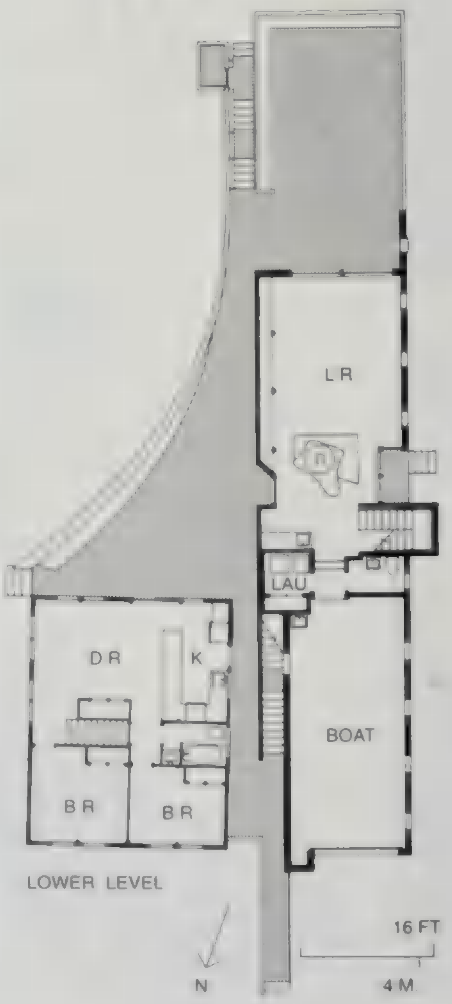
Treating the existing prefabricated A-frame cottage as a given, the Hariris repaired its old foundations and stripped it of its fake shutters and pink paint. The new 100-foot-long addition is a frame structure built on wood beams resting on concrete piers (drawings right). A small pavilion topped with a wave-like roof projects beyond the house and encloses an outdoor shower (opposite, top). Slot windows intended to evoke the horizontal markings on birch bark cut into the east facade (opposite, middle) and act as light sources at night when the house is lit up and people are outside on the deck.











Like the house's exterior, the interiors employ a rustic palette of red-cedar walls and ceilings with white-maple floors. Corrugated metal around the stairs (bottom left) contrasts with the wood and recalls the combination of industrial and natural materials found in local farm buildings. To provide a more enclosed and private area within the long flowing living room, the architects limited glazing on the east wall to the house's idiosyncratic slot windows (top left). A freestanding fireplace acts as a sculptural element in the living room, while its stainless-steel chimney provides a vertical accent to the mostly horizontal space.

While views are carefully framed on the main level, glazing is more generous upstairs. With the roof sitting above a large band of windows, sunlight streams into the house from above. An airy reading room overlooks the living room and is connected to the master bedroom by a narrow bridge (opposite).

Credits
Barry's Bay Cottage
Ontario, Canada
Owners: *Jane and Charles Baird*
Architect: *Hariri & Hariri—Gisue Hariri, Mojgan Hariri, principals-in-charge; Paul Baird, Graydon Yearick, Brigid Hogan, Aaron McDonald, design team*
Associate Architect: *M.W. Swinarski*
Engineers: *Robert Silman Associates (structural); Paul Walkington (geotechnical)*
Consultant: *P.J. Stringer (surveyor)*
General Contractor: *Zuracon Inc.*

CALL FOR ENTRIES

RECORD INTERIORS 1995

The editors of ARCHITECTURAL RECORD announce the 26th annual RECORD INTERIORS awards program. This program is open to any registered architect; work previously published in other national design magazines is disqualified. Of particular interest are projects that incorporate innovative programs, building technologies, and use of materials. There is an entry fee of $15 per submission; please make checks payable to ARCHITECTURAL RECORD. Submissions must also include plan(s), photographs (transparencies, slides, or prints), and a brief project description bound firmly in an 8-1/2- by 11-in. folder—and be postmarked no later than April 30, 1995. Winning entries will be featured in the 1995 RECORD INTERIORS. Other submissions will either be returned or scheduled for a future issue. If you would like your entry returned, please include a self-addressed envelope with appropriate postage.

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Karen D. Stein
RECORD INTERIORS
ARCHITECTURAL RECORD
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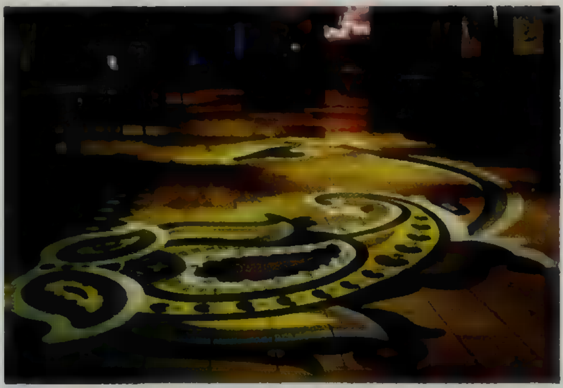
312. Handcrafted. Epro specializes in rustic ceramics that offer a range of tones within each specific color. Tiles come in 15 different sizes and three trims. Shown here with Heritage field tiles, new Intricates are miniature rectangular and triangle shapes for use in border mosaics or as accents. 614/882-6990. Epro, Inc., Westerville, Ohio.

313. Cut to order. This maker's custom-design team used water-jet cutting tools to translate Earl Swensson Associates' bandanna motif into 4,000 sq ft of porcelain-tile floor. Layout and installation are described as less costly than standard mosaic work. 800/221-9093. Crossville Ceramics, Crossville, Tenn.

314. Look of ages. Antiquity, a new tile line, is said to replicate the look of old, distressed stone in easy-care matte glazed ceramic tile. Edges have a "chiseled" appearance. Range comes in four neutral-toned colorways, with coordinating accent, corner, and border pre-mounted cut-tile designs. 215/393-2237. American Olean, Lansdale, Pa.

315. Southwestern flooring. Mission Series incorporates authentic saltillo textures and colorations in a minimal-maintenance glazed floor tile. Tiles come in 12- and 16-in. sizes; matching grout colors available. 800/933-TILE. Dal-Tile Corp., Dallas.

312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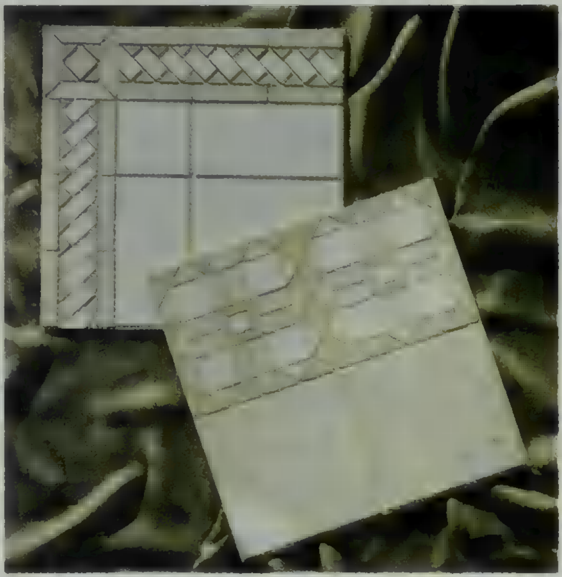
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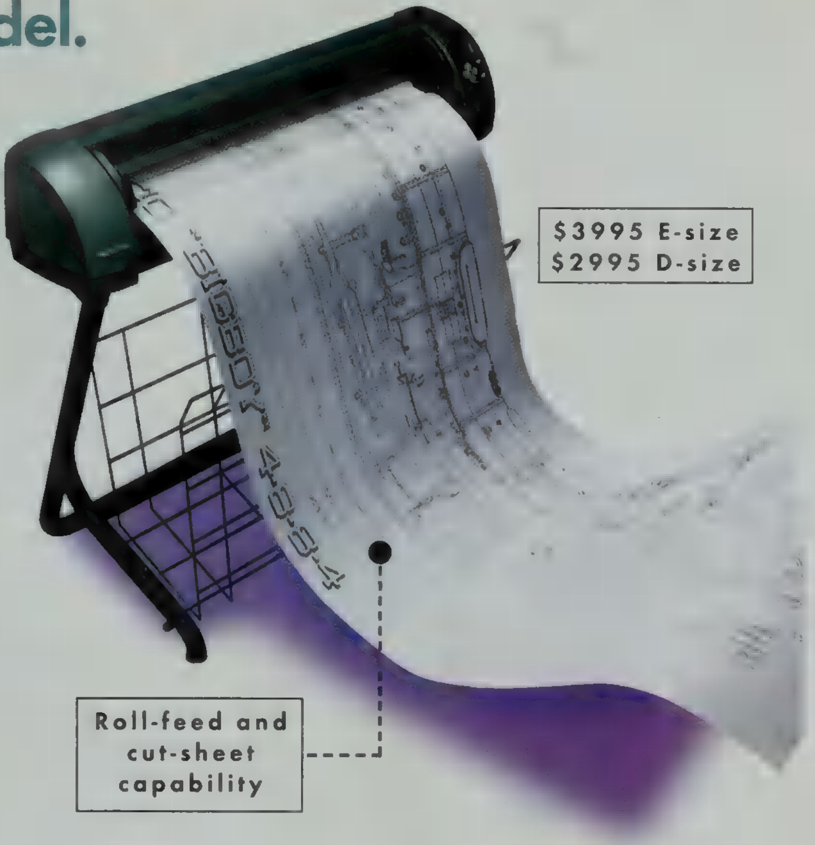
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New Products *continued from page 103*

316. Commercial-kitchen stainless
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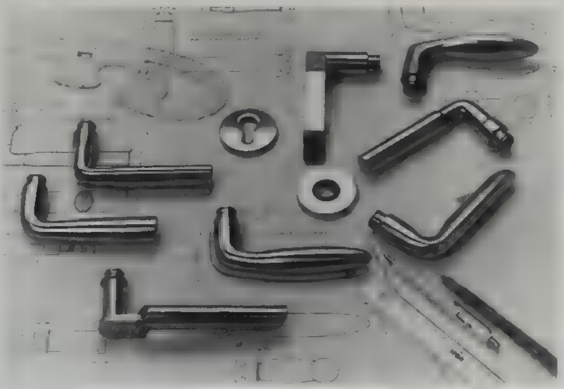

317. Stainless-steel hardware
A Chicago-based distributor imports FSB (Franz Schneider Brakel) door and window hardware from Germany for architects and hardware specifiers. The range includes eight new stainless-steel levers designed by Hans Hollein, Miguel Mila, and Hartmut Weise, available in standard satin- or mirror-polished stainless. On special order, a vacuum-deposition technique makes possible three titanium-over-steel finishes: black satin, matte-gray steel, and brass/gold stainless steel. FSB also makes hardware in anodized aluminum and polished brass. 800/621-1937. The Ironmonger, Chicago. ■

Corrections

- RECORD's coverage of the Central Administration and Junior School Building, Museum of Fine Arts in Houston [January 1995, pages 70-77], Carlos Jimenez Architecture Studio, should have designated John H. Bowley as project architect. Also, The Powell Group should have been listed as contract furniture and installation subcontractor.
- The animation of Mies van der Rohe's Farnsworth House that illustrated our story on on-line services (March 1994, page 40) was made by Columbia University architecture students Chris Fox and Peter Oberdorfer.
- Commenting on the article on single-ply roofing by Dana Holbrook, [Fundamentals, Feb. 1994, pp 38-39], Joe Luthy, marketing manger of Versico, Inc., points out that the basic polymeric structure of TPO membranes, unlike other thermoplastics cited, is inherently flexible, and does not require plasticizers or other additives to provide flexibility. In addition, TPO membranes have no chlorinated ingredients, and as such are recyclable; very solvent-resistant, TPO seams can be sealed by heat-welding only.

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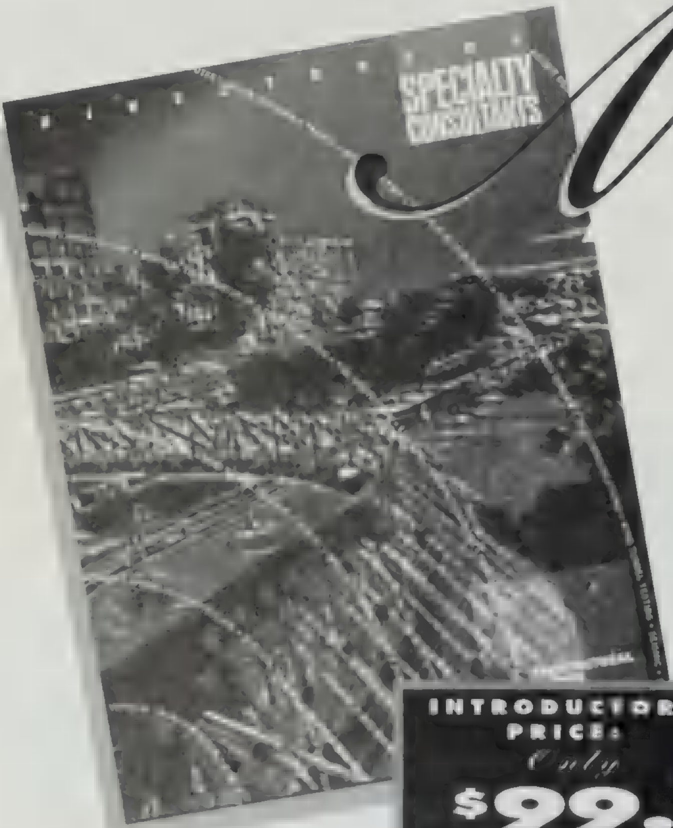

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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.

Pages 62-67
Spiral House
Dean/Wolf Architects
Siding: Clear-finished Western Red Cedar, Mary's River, Ore. Architectural concrete: Roger and Sons. Ash- and teak-framed windows and doors: Duratherm Window Corp. Brushed stainless-steel locksets: Omnia. EPDM roofing: Carlisle SynTec System. Lead-coated copper roof edge: fabricated by Rich Donsavage. Pavers: New York State Bluestone; courtyard wall: granite from site, fabricated by Gary Bottino, Stone Mason. Skylights: Wasco. Exterior lighting: BEGA. Recessed downlights: Lightolier, Inc. Decorative fixtures: Akari; Artemide, Inc. Wood-floor finish: Miaco (oil-based polyurethane). Switch plates: Leviton (Decora). Paints: Benjamin Moore & Co. Carpet: Karastan. Railings: Patsy Ironworks. Low-voltage lighting: Tech Lighting. Kitchen floor: Tile Gallery, with tummeled limestone inset, Petrillo Stone.

Pages 68-69
Private Residence, Chicago
Frederick Phillips & Associates, Architect
Aluminum-framed windows, doors: Acorn Window Systems. Locksets: Schlage Lock Co. Fence: custom, fabricated by Bayers Blacksmith. Paint on metal surfaces: Galvacon. Elastomeric roofing: U.S. Intec/Brai, Inc. Garage door: custom by architects, fabricated by Kelly Woodworks. Paints: Benjamin Moore & Co. Laminate countertops: Formica. Canvas roller shades: Glover Shade.

Pages 70-73
Sarli Residence
Judith Sheine, Architect
Metal roof decking: N.A.T. Industries. Glass and wood exterior doors: Douglas fir, custom. Locksets: Schlage Lock Co. Satin finish on birch-veneer plywood: Varathane. Windows: custom, fabricated by Chris Dangermond Woodworking. Aluminum pendant: Modernica.

Pages 82-87
Drager Residence
Franklin D. Israel Design Associates, Architect
Copper shingles: Durasystems. Garage door: Amarr. Entrances, wood windows, and cedar siding: custom by architects, fabricated by Fourth Street Woodworking+Roderick Smith. Window fittings: Truth Hardware. Locksets: Schlage Lock Co.; Adams Rite Co. Integral-color stucco and plaster: Beaton Plaster. Fire box: Superior Fireplace. Hearth: Purple slate. Paints: Benjamin Moore & Co; Kelly Moore. Pin spots and recessed downlights: Capri. Drawer pulls: Hefele; Details. Chaise: Donghia. Architectural-metal railings: fabricated by Railmakers.

Pages 88-91
31st Street House
Koning Eizenberg Architecture, Architects
Paint on exterior stucco, interior paint: Dunn Edwards. Custom wood windows, sliders, and garage doors: Charles Kuipers Design, Inc. Door knobs: Schlage Lock Co. Window shades: Advanced Floor & Window. Cementitious countertop: Syndecrete. Tile: Buchtal. Stove: Viking.

Pages 92-95
Lombard/Miller House
Brooks & Carey, Architect
Solid-white and red stains on red-cedar board and batten siding: Cabot's (OVT). Yellow paints: Benjamin Moore & Co. Double-hung and awning windows: Marvin Windows & Doors. Doors: Brosco. Finish on interior floors and paneling: Watco. Furniture: custom by architect, fabricated by Mike Burgess. Furniture stain: Mohawk. Locksets: Stanley. "Vapor proof" lights: Stonco. Kitchen sink: American-Standard. Exterior lighting: Killark.

Pages 96-101
Barry's Bay Cottage
Hariri and Hariri, Architects
Red cedar tongue-and-groove siding: MacMillan Bloedel. Weathering stain: Thompson's Water Seal. Corrugated sheet metal: VicWest Steel. Windows: Donat Flamand, Inc. French-style doors: Pella Windows & Doors. Interior doors: Premdoor, Inc. Locksets: Weiser. Paints: Pittsburgh Paints. Tile floor: Olympia Tile. Upholstery fabric: Shyam Ahuja. Stainless-steel fireplace: custom by architect, fabricated by Zuracon Inc. Structural connections: Teco. Wall-mount fixtures: Hubbell. ■

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Chris Eden photos

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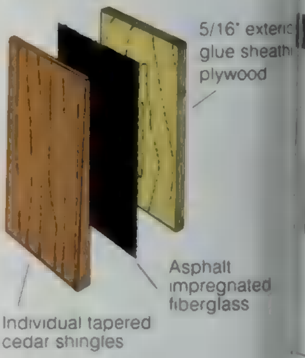
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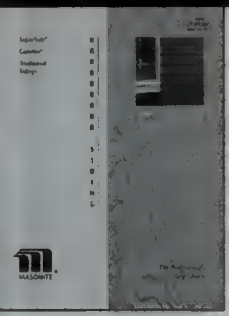
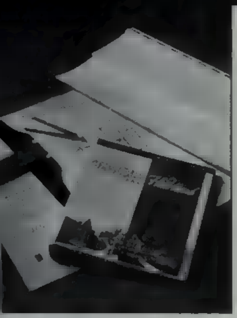


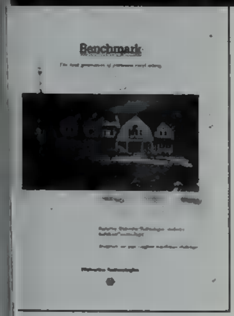
00. Prefinished clapboard
Made of a wood composite, Colorlok
iding now comes in a new six-inch
rofile designed to replicate the look
f beveled-cedar lap siding. Offered
n 16-ft lengths and six factory
olors—two whites, two grays, a
eige, and blue—siding is said to
ave long-term resistance to weath-
ring. 800/255-0785. Masonite
Building Products, Chicago.

401. Wind-resistant vinyl
A colorful design guide explains how the CertiLock panel edge holds Monogram vinyl siding in place against substantial negative and positive wind-load pressures. Offered in 17 low-gloss colors in both rough-cedar and smooth-brushed surfaces, siding comes in several clapboard-profile options. 800/233-8990. CertainTeed Corp., Valley Forge, Pa.



02. Exterior-color selection
Prepared for architects and other
rofessionals, a binder-format speci-
cation guide gives performance,
est, color-option, and weathering
ata on all of this maker's vinyl-
iding products, including clapboard-
nd shingle-looks. Sampling program
nd technical support available.
00/328-7864. Heartland Building
roducts, Memphis, Tenn.

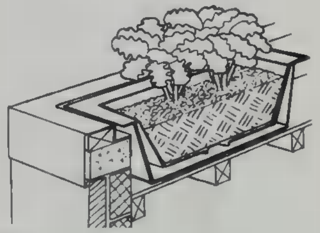
403. Two-tone cedar look
Made in Canada by a Masco subsidiary, Fieldbrook vinyl siding has a random, two-tone pattern, described as the maker's best effort in capturing the traditional look of natural wood. A color brochure illustrates color options and profiles, and explains the siding's non-prorated lifetime performance guarantee. 519/853-1230. BPCO, Acton, Ont.



04. Extra-rigid, long span
catalog explains how new Bench-
rk siding can minimize imper-
tions in a home's substrate and be
talled without sagging, flexing, or
king. Fiberglass tube-in-channel
nforcement adds stiffness without
stricting thermal movement.
ling, trim, and accessories come in
colors. 800/521-9020. Wolverine
hnologies, Livonia, Mich.

405. Pre-finished shingles
A new sidewall option, 18-in. Western red cedar shingles can be specified already factory-coated on all sides and edges with an oil-based finish. Folder illustrates color choices: gray, tan, bleach, and natural; shingles are all edge-grain heartwood. Samples offered at no charge. 800/426-8970. Shakertown, Winlock, Wash.

Continued on page 111



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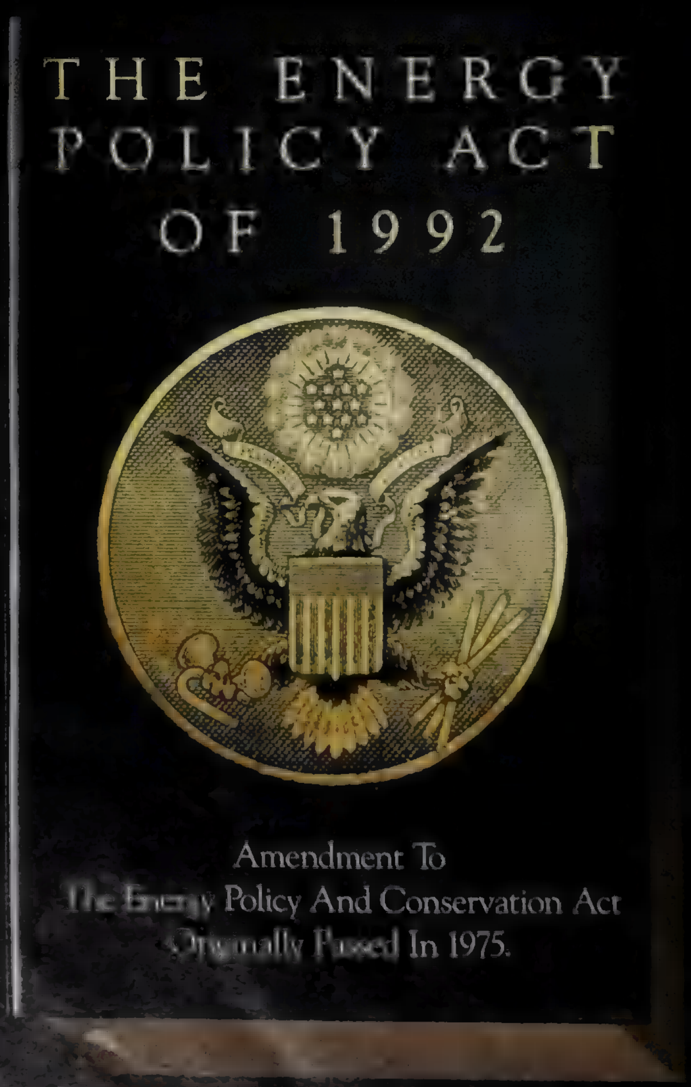

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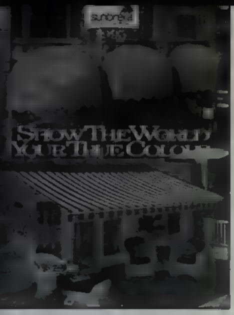
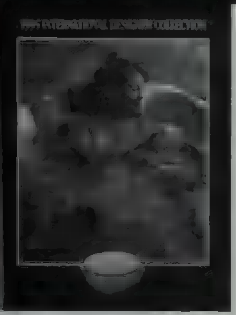
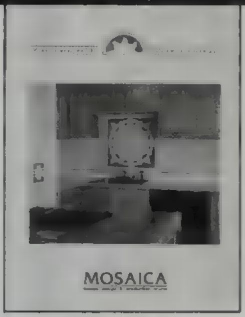


406. Fabrics for out-of-doors
A 12-page guide illustrates residen-
ial and commercial applications said
o demonstrate the design impact of
wnings, canopies, and outdoor-furni-
ure cushions made of Sunbrella
olution-dyed acrylic fibers. A 1995
pdate includes photos of over 100
olid-color and striped fabrics; swatch
rogram offered. 910/227-6211. Glen
Raven Mills, Glen Raven, N.C.

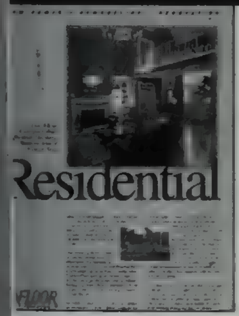
407. Stile-and-rail doors
A color brochure covers several styles of interior and exterior doors made of Douglas fir, outlining how to store, handle, finish, install, and maintain wood doors for optimum results. Lists all sidelight and other glazing options for entrance-, sash-, and French-door configurations. Bend Door Co., Division of Jeld-Wen, Inc., Bend, Ore.



408. Tubs and showers
acuzzi's new catalog includes full
imensions and floor-loading require-
nents for all models of residential
hirlpools. Also covers such new
nits as a shower that incorporates a
ill-size whirlpool; an extra-deep
uxura tub; and customizable shower
ystems with base, wall, and plumb-
g modules. 800/678-6889. Jacuzzi,
ıc., Walnut Creek, Calif.



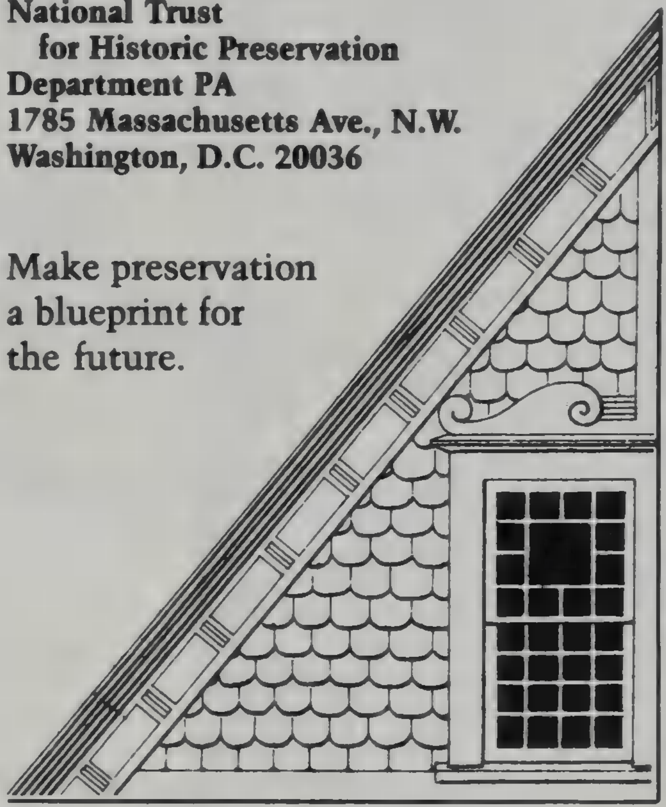
409. Ceramic-tile murals
Decorative wall designs and slip-resistant floor motifs of ceramic tile are supplied either from stock or following a designer's sketch. Using proprietary tile-layout software for both geometrically regular and irregular patterns, mosaics are cut and mounted on mesh for easy installation. Fit into standard tile modules. Mosaica, Inc., Worcester, Mass.



10. Radiant-heating systems
pplication-specific brochures show
w different Infloor radiant systems
ovide constant, even heat with no
seboards or ductwork to restrict
rniture placement. Products includ-
are suitable for whole-home use,
terior snow-melt, single-room addi-
ns, and large commercial
tallations. 800/356-7887. Gyp-Crete
rp., Hamel, Minn.

411. Architectural millwork
A 32-page catalog shows Details millwork, including moldings, window and door trim, brackets, and dentil blocks. Made of polyurethane in over 1,000 styles for interior and exterior use, millwork comes prefinished with a white topcoat; accepts oil or latex paint. Can be glued, sawed, or nailed like wood. 800/BUILD-GP. Georgia-Pacific Corp., Atlanta. ■

more information, circle item numbers on Reader Service Card.



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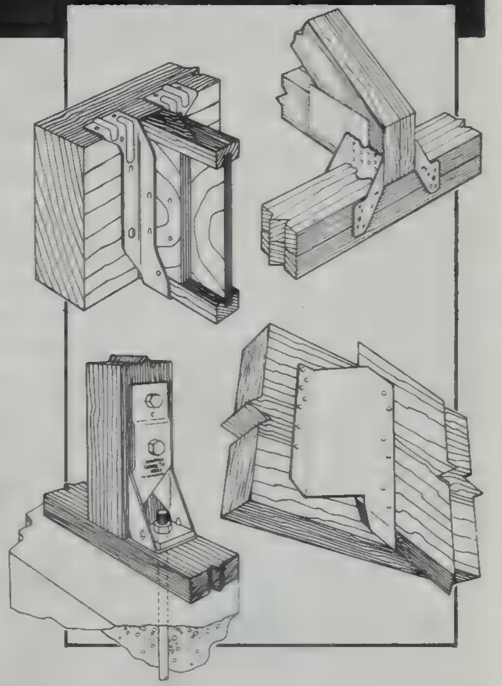

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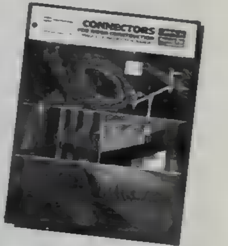

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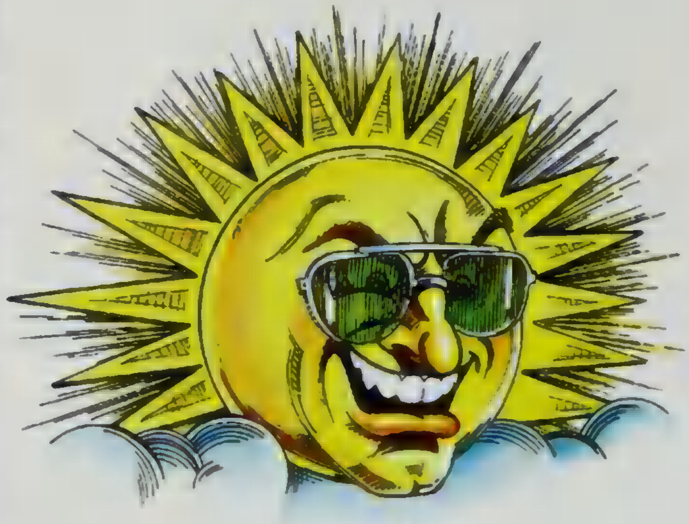

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Disabilities *continued from page 33*

"disproportionate" to the overall cost of the project or alteration. For projects built after the effective dates of the law, both owner and architect are responsible for violations. The architect alone is usually liable when the owner demands that the architect design a remedy for a violation, and the architect fails to do so. But the owner is liable if the architect recommends an action to correct what is later deemed a violation and the owner doesn't accept it. Savage recommends that architects document in writing all decisions regarding ADA compliance to ensure that they are not blamed if a complaint is filed. Richard Hardaway, like other architects, chafes: "I resent that I am a sitting duck for a lawsuit over a code that's not a code, but is enforced like a code."

The need for certainty

Michael Jawer, assistant vice president of the Building Owners and Managers Association, International (BOMA), faults ADA for not providing certainty in resolving accessibility conflicts. Slip resistance is an example of a requirement that is, well, slippery, as architect and building consultant Jim Sealy relates in a lengthy explanation that can be accessed in the Building Codes & Standards forum on *AIAOnline*. No product or material is "ever going to satisfy the act's original requirements that a surface be slip-resistant," he writes.

"The ADA is a complaint-based process," Beasley says. "The legal process doesn't allow for constructive dialog. If the application of [all] these design standards was played out in court it would be a mess!" Adds Mintzer, "Even people with disabilities don't always agree whether the best height for a toilet is 17 or 19 in." To demonstrate a good-faith effort, BOMA recommends that its members consult with tenants and patrons to see if their needs are being met. Other owners bring in advocates, such as Easter Seals, to make suggestions. ADA expects employers to make workplaces accessible to those who may have rare or unique disabilities, but architects don't have to become experts on every possible handicap. Physical therapists from Magee Rehabilitation Center in Philadelphia, like many facilities around the country, will offer recommendations.

Yvonne Gee, a physical therapist at Magee, asks designers to look beyond the written law to what accessibility really means. "I've seen instances where a door that was clearly wide enough for wheelchair accessibility was hung on hinges that were so stiff that someone in a wheelchair couldn't open it." ■

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Manufacturers' Spotlight

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GameTime, Inc.

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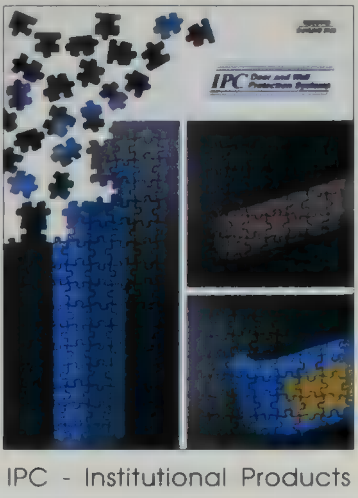

IPC - Institutional Products Corporation is a manufacturer of high impact door, corner and wall protection systems. Our catalog illustrates a product line that includes Handrails, Corner Guards, Wall Guards, Kickplates and Wallcovering. Our durable vinyl products, offered in 50 designer colors, provide an attractive way to protect interior finishes from damage.

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Omega Fence Systems

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Manufacturers' Spotlight

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Jacuzzi Whirlpool Bath

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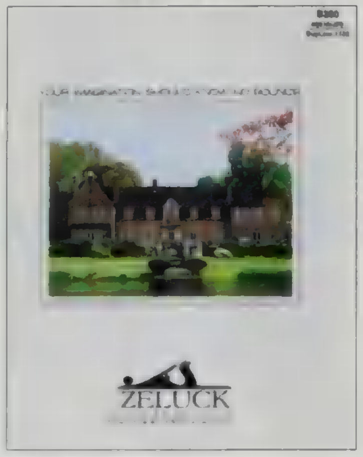
Wood Windows and Doors



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Zeluck Architectural Windows & Doors

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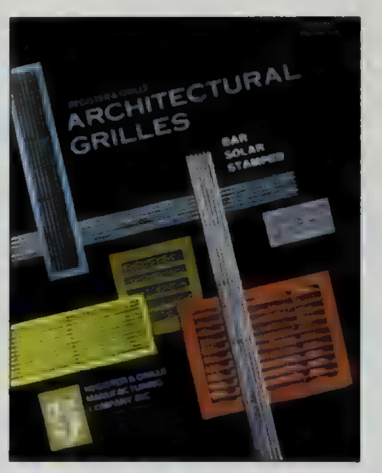

Unusual visual effects emerge when our grilles are designed for area effects. Versatility is the theme. R&G offers architects and interior designers many ways to express the changing forms of metal with the integrity of R&G's architectural grilles. Custom or standard finishes are available plus any grille can be made in matching color to blend with your decor. 202 Norman Ave., Bklyn. NY 11222. 800-521-4895. Fax: 718-349-2611.

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Atlas Door Corp.

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Serving the many different sports & recreational needs of elementary students is the goal of the Charles Barrett Recreational Center in Alexandria, VA. Center Director for the Northern Virginia facility, Mac Slover, noted "the advantage of Elasti-Plus for our facility is its good resilience & subsequent reduction of stress on elementary children, teens & adults who use our facility for a wide variety of activities." Slover continued, "the synthetic system's flexibility also allows us to better manage full utilization of the facility for all types of activities ranging from volleyball & basketball to shuffleboard, four square & Italian hop scotch. I am convinced that this type of surface is best for our type of facility & ultimate users. I highly recommend Elasti-Plus," he concluded. For more information about the Elasti-Plus system, call 800-833-7144 today.

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The Paving Choice That Protects And Enhances The Environment
Grasspave²

Grasspave² invisible porous pavers are made entirely from recycled plastics, saving truckload volumes of plastic articles from landfills, and creating sparkling green and real grass-covered spaces where asphalt once reigned - in firelanes, overflow and event parking lots, and residential drives and parking.

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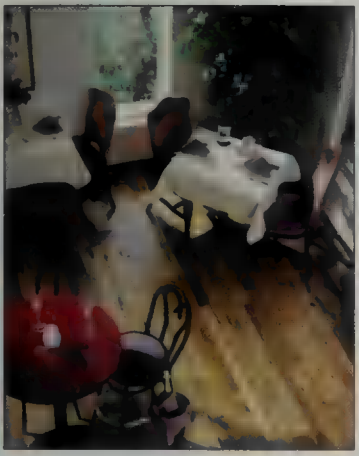

Our planks are naturally Distressed by Mother Nature, Aged by Father Time™ and can be used for flooring, panelling or millwork. From old barnwood emerges a pricision-milled plank that retains the patina and character imparted by decades of wind , rain and sun, and the signs of old-time craftsman. Free brochure.

Aged Woods®

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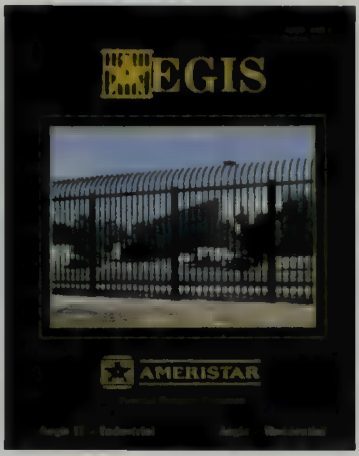

Aegis ornamental fence systems feature strong Forerunner™ rails, internal retaining rods, & specially designed panel brackets. Aegis II industrial ornamental fence offers the strongest security ornamental fence available in todays market. Aegis holds the distinction of having its fence systems specified by more architects & builders than any other in the market. Both industrial & residential brochures are available upon request & include data on structure, design, & options available. Panel design is a component system for easy shipping. For additional information & a free 8-page brochure , call (800) 321-8724. P.O. Box 581000, Tulsa, OK 74158-1000. Fax# (918) 835-0899

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Jomy Safety Ladder

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Applied as a slurry coating, Xypex is a chemical treatment that waterproofs by penetrating the concrete with a crystalline formation that 'plugs' the pores of the structure preventing water seepage. Xypex is ideal for use on the 'inside' of wet underground structures.

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Stuart Dean

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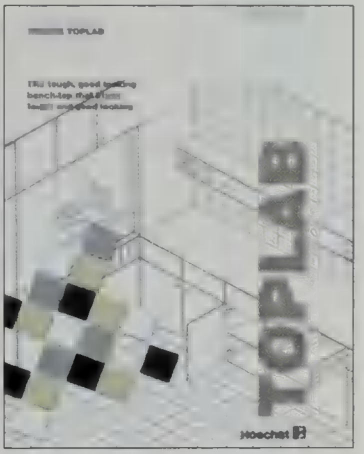

Trespa® Toplab® grade resists strong acids, e.g. 96% Sulfuric, and other chemicals. Toplab is durable, easy-to-clean, and available in colors. It will not rot, rust, delaminate, or support bacteria. Toplab is available in sizes up to 1" thick and 12' in length; it remains flat for excellent butt joints and is 25% lighter than epoxy. 1-800-4-TRESPA.

Hoechst Celanese Corp.

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CycLockers are all-steel modular bicycle storage cabinets that accommodate two bicycles per unit. Modules can be used individually or in linked groups sharing common walls. Choose from over 170 coating colors, two-toned color schemes, or stainless steel versions. For new brochure call 1-800/547-1940 ; request extension 530. Columbia Cascade Co. Portland, Oregon.

Columbia Cascade

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Design Materials, Inc.

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Manufacturers' Spotlight

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REASONS from Transwall Corp., a manufacturer of movable office partitions & systems furniture, is a new stacking system designed to provide improved office space facilities with maximum flexibility & a minimum of parts inventory. It offers quick off-module changes for work surfaces & overhead storage, which can easily be rearranged on horizontal rails without structural panel changes. Total wire management is provided in the 4" thick panels, as well as an unlimited choice of aesthetic color selections.

Transwall Corp.

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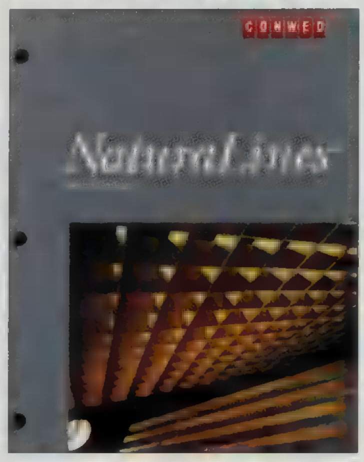
Conwed Respond Ultimate I Panel



Conwed Respond Ultimate I is an acoustical wall and ceiling panel designed for use in areas requiring abuse resistance and acoustical absorption. It utilizes a glass fiber core faced with an acoustically transparent open perforated rigid vinyl sheet and wrapped with fabric or vinyl. Ideal for use in: gymnasiums, theatres, and multi-purpose rooms. Conwed, 1205 Worden Ave. E., Ladysmith, WI 54848, 800-932-2383, Fax: 800-833-4798.

Conwed

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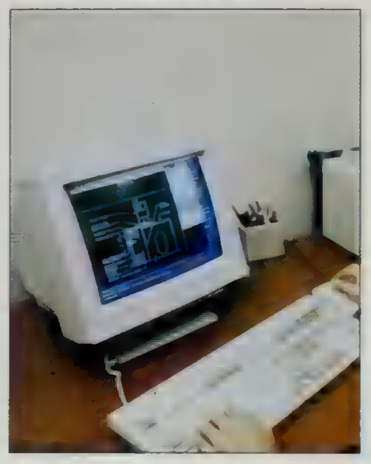
SENERGY CAD-NET SOFTWARE



Architects can cut hours to minutes when designing exterior walls with Senergy's CAD-NET, a new AutoCAD - compatible (V.11 and higher) specification & detail drawing program for Exterior insulation & Finish Systems (EIFS). The CAD-NET program provides specifications & details for Senergy's Senerflex, Senerthik & QRsystem. CAD-NET is available on either 3-1/2" or 5-1/4" diskettes. **For more information: Senergy 1-800-221-WALL. Leaders in EIFS.**

Senergy

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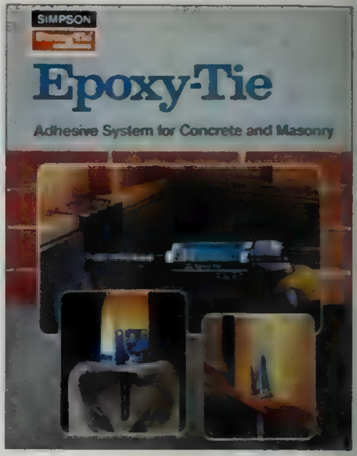
Anchoring bolts easier with EPOXY-TIE ™



Low-cost epoxy system for retrofits in concrete or masonry provides stronger anchoring than can be achieved with mechanical anchors. Epoxy-Tie™ bonds with surrounding concrete; anchor is less prone to side-burst during close-interval installation. Higher resistance to moisture and vibration than mechanical anchors. Full information in brochure **F-ET**.

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Hoover Treated Wood Products, Inc.

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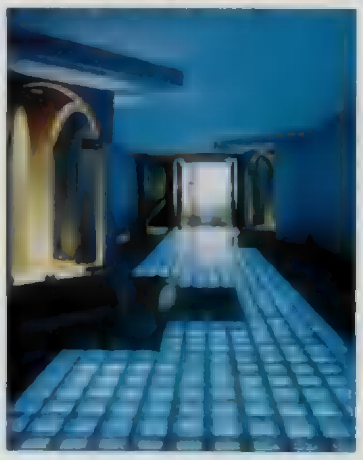
IBP Glass Block Grid System™



The Innovative Building Products (IBP) Glass Block Grid System™ combines a strong, lightweight aluminum frame with glass block and weatherproof sealant to provide cost-effective glass block installation without mortar. Applications of the IBP Grid System are limited only by the imagination. Over thirty thousand successful installations worldwide include doors, store fronts, curtain walls, mosaics, shower enclosures, retail displays, signage, furniture, sun spaces and floor.

Acme Brick Co.

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Raymond Enkeboll Designs

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Interior Systems

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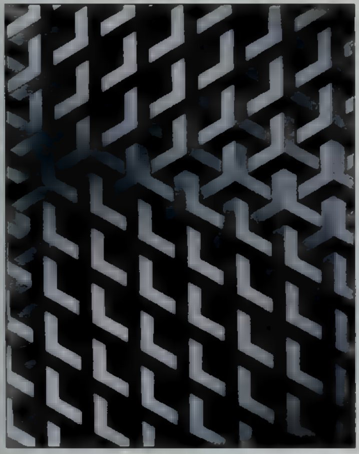

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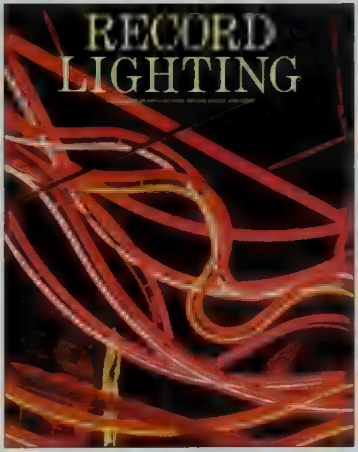

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Record Lighting

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TSAO+CLS

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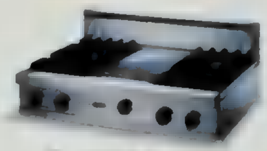
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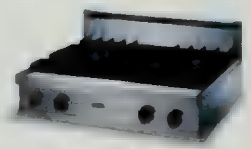
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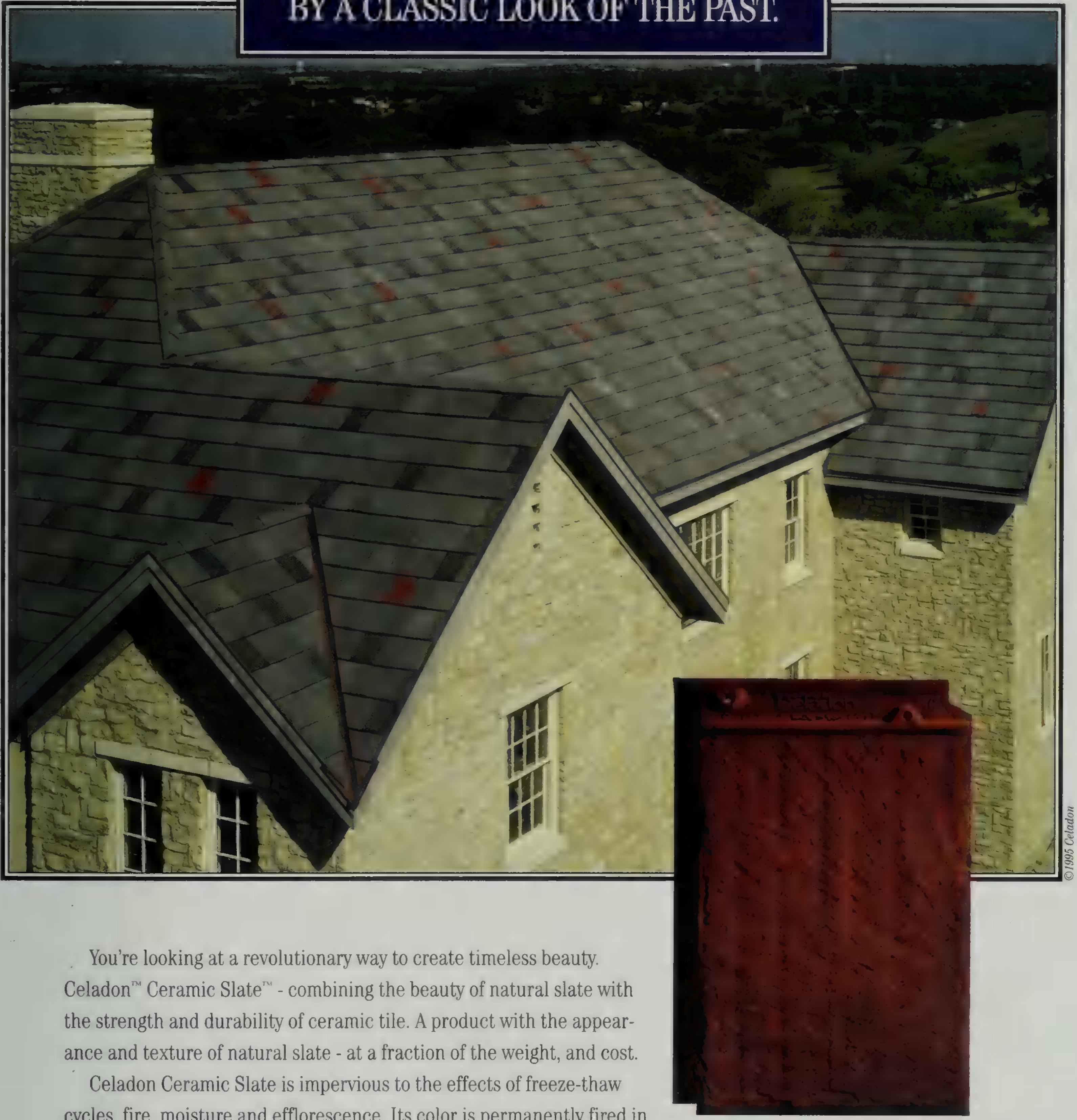

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